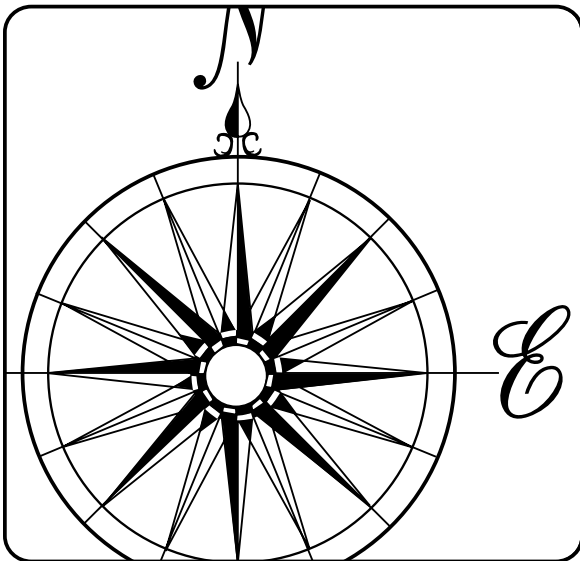




Specialty Farming in Idaho: Selecting a Site

D. L. Barney, T. L. Finnerty, and C. J. Mancuso



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Regardless of the type of farm you have in mind, one of the most important decisions you will ever make about that farm is selecting a suitable site. The other two most important decisions are selecting your enterprise and finding a market for your product. On a poor site, the best manager in the world will have a hard time growing a crop. Similarly, high production of a valuable product on a great site leads to nothing if the product can't be marketed.

This publication was written to help prospective entrepreneurs select the best possible sites for their specialty farms. Entrepreneurs should also read this publication's companion piece, *Specialty Farming in Idaho: Is It for Me?* Information on how to obtain University of Idaho College of Agriculture publications appears at the end of this article.

Your product

A statement that extension educators and specialists hear frequently is, "I've just purchased 10 acres of land. What can I grow on it and make money?" Unfortunately, the answer is often that the client really can't grow anything on that land and make money.

Success in farming starts with planning. Buying land for a farm because of a beautiful view or proximity to a lake or other aesthetic reasons is a terrible way to start an enterprise. Know what you want to do before you start investing in land, equipment, and stock. Make sure you have the skills and resources necessary to produce and market your product. Learn all you can about the needs and risks of the enterprise, and then select a site that gives you the best possible chance for success.

What is your intended use for the crop? If you plan to market fresh fruit or vegetables, the time available for harvesting and shipping tends to be very limited.

Fresh raspberries, for example, should be on consumers' tables within 48 hours of harvest. Make sure that you select a site that will allow you to get your product to market in top shape.

If you plan to process your product in some way, make sure adequate processing facilities are available in your area. If your only interest is in making a value-added product, you may find it more economical to devote your time and resources to processing and let someone else worry about producing the raw material.

After determining if you *can* do what you want, decide if you *should*. Just because nursery stock, wild rice, or some other commodity is successfully produced and marketed in a given area is not justification enough for you to begin production. Find out what the current and projected markets are. Liberty Hyde Bailey, one of America's greatest horticulturists, remarked in 1897 that as soon as an agricultural enterprise becomes successful in a given area, overproduction and low prices generally soon follow. The same pattern holds today. Before beginning an enterprise, be sure you will be able to both successfully produce and market your product.

Your resources

Philosophies aside, success in a business venture implies financial success. Starting a farming operation is not cheap. Before making any investments, take a critical look at the capital you have to establish and maintain an enterprise until it is self-sustaining. If you have unlimited capital to spend on trellises, fences, irrigation systems, farm buildings, equipment, and for other expenses, then site selection is easier, of course. Since most people's resources are limited, planning and good judgment are crucial.

Climate

There is an old axiom in farming that climate sets the limits within which all other factors operate. In other words, climate is the most important consideration in whether to grow a crop in a given area. Grapes and peaches, for example, are well adapted to the mild climate along the Pacific Coast in California and Oregon. Harsh winters and short growing seasons, however, make the commercial production of these crops difficult in northern, central, and southeastern Idaho. Other crops, such as blueberries and many types of ornamental nursery stock, thrive in a cool mountain climate. Some of the climatic factors to consider in matching a crop with a specific site are listed below.

Length of the growing season

The time between the last frost of spring and the first frost of fall is a major consideration in selecting a site, since many actively growing plant tissues cannot tolerate temperatures below about 28°F. Most annual crops are not planted until the danger of frost has passed, and crops normally must be harvested before the first fall frost.

Average growing seasons in Idaho vary tremendously from one location to another, from as few as 30 to as many as 154 days (table 1). Bear in mind that the figures in table 1 are *average* frost dates, and about half of the time the seasons will be somewhat shorter than those listed.

With the exceptions of the Clearwater River valley and the area around Lewiston, most of northern, central, and southeastern Idaho is best suited to crops that are adapted to short or very short growing seasons. Long-season crops are normally produced in southwestern Idaho. Frost dates are very important to fruit and vegetable growers, who can lose blossoms, fruit, or plants to spring and autumn frosts. On marginal sites, you might have to use overhead sprinklers, wind machines, or other devices to prevent frost damage. The cost of such frost protection can be high. For nursery stock and Christmas tree producers early fall freezes and late spring thaws can impede digging or planting operations.

Minimum winter temperatures

Cold winters are a limiting factor in the production of some livestock and perennial crops in Idaho. Crops such as grapes, blackberries, and peaches are injured or killed at relatively mild freezing temperatures. In evaluating the congeniality of a site and enterprise,

you must consider not what the average minimum temperature is, but what the probability of a killing freeze is. Most perennial crops require several years to come into production, and some remain in place from 10 to 50 years or more. Even if you get a killing freeze only every 5 to 15 years, you might be facing economic ruin.

If you use the Plant Hardiness Zone Map published by the U.S. Department of Agriculture to select a commercial crop and site for Idaho, select a crop that is at least one, and preferably two, hardiness zones colder than what is listed for your site. The Plant Hardiness Zone Map is published in many nursery catalogs.

Day/night temperatures

Plant growth is largely determined by soil and air temperatures, and different plants have different temperature requirements. Broccoli, for example, is a cool-season crop that grows very well in locations with short seasons and cool nights. Tomatoes and sweet corn, on the other hand, require higher temperatures to set and mature crops. Many locations in northern, central, and southeastern Idaho are characterized by cool nights. Trying to ripen tomatoes or other warm-season crops under these conditions can be frustrating and may require special techniques, such as row covers or plastic film tunnels. Be sure to select a site where growing-season temperatures are compatible with your intended enterprise.

Winds

Consider the direction, frequency, duration, and velocity of prevailing winds. These factors are important in selecting trellis systems and row orientations. Some plants are especially susceptible to leaf tattering caused by frequent or harsh winds. In southern Idaho, wind-blown sand can severely damage some crops. Windbreaks may be necessary for windy sites.

Precipitation

Annual precipitation in Idaho ranges from less than 10 to more than 60 inches per year. Even in high rainfall areas, summers are often hot and dry, and irrigation is necessary for many annual and perennial crops. In high rainfall areas, prolonged wet weather during the early spring can create disease problems and prevent timely planting. Heavy snowfall can cause broken branches, collapsed greenhouses, or stranded livestock, but also helps to insulate plants from severe winter temperatures and is an important source of water for irrigation and livestock.

Soil

Contrary to popular opinion, soil fertility is a relatively minor consideration in selecting a site. Improving fertility is generally easy, while changing other soil characteristics can be much more of a problem.

Correcting drainage problems on a wet site, improving water-holding capacity on a droughty site, and making major changes in soil pH and organic matter are difficult and often expensive.

With a few exceptions, crop plants prefer well-drained, but not droughty, soils. Poor drainage is usually associated with large amounts of clay in the soil, high water tables, or hardpans. Drainage problems are often indicated by very dark soils that are high in organic matter or which have gray-green streaks in their profile.

Soil surveys have been completed for all or part of 27 of Idaho's 44 counties. The surveys, often available from University of Idaho Extension offices, give detailed information on soil types within an area, along with soil characteristics and recommended management practices.

Although published soil surveys provide a great deal of valuable information, you must evaluate each site on its own merits. Never buy a site for farming unless you have taken representative soil samples and have a clear picture of what the soil profile looks like. Be especially careful in determining where the water table is throughout the year, whether there are any hardpans or clay layers and how deep they are, whether the soil shows indications of drainage problems or is so sandy that it won't hold any moisture, and the depth of the topsoil. Bear in mind that even a small site may have several different types of soil, some of which might be unsuitable for your intended enterprise.

Water

Before you start looking for a site, you should determine what your water needs will be for the enterprise. How much will you need and when will you need it? Then determine what sources of water are available and what your water rights will be. Wells, springs, streams, lakes, and farm ponds are all used to supply water for livestock and irrigation in Idaho. For your particular source or sources, determine if the water is seasonal or year-round, what the capacity of the source is, whether you have legal access to the water, and how much accessing the water will cost.

Irrigation system

What type of irrigation system do you plan to use? Furrow irrigation (also called rill or flood), overhead

sprinklers, and trickle or drip irrigation systems are commonly used for crops in Idaho.

Furrow irrigation is typically used for field row crops in areas where water is abundant and the soils are light and well-drained. The method is labor intensive and not particularly efficient in terms of water use. Fields must be level or have a slope of no more than about 2 percent. Maintaining an even distribution of water throughout a field can be difficult.

Overhead sprinklers can be adapted to almost any site, are relatively inexpensive to install, provide generally uniform irrigation, can be used to protect fruit blossoms during spring frosts, and can help to cleanse leaves and fruit of dust. Maintenance and repair of overhead sprinkler systems is generally relatively easy and inexpensive. On the negative side, overhead irrigation systems waste a lot of water through evaporation and the placement of water between crop rows (which increases weed problems), and some systems require frequent movement of hand lines. Overhead irrigation also wets foliage and fruit regularly and can increase disease problems.

Trickle or drip irrigation systems are very efficient at placing water exactly where you want and use much less water to produce a crop than overhead or furrow systems. Disease problems are reduced when compared with overhead irrigation systems because the foliage and fruit are never sprinkled with water. Trickle systems, however, are expensive to install and maintain, and require clean, high-quality water to prevent the emitters from clogging. Plugged drip emitters are much harder to spot than plugged overhead sprinklers, and maintaining uniform irrigation requires constant scouting and maintenance. Trickle systems generally either require level fields or must be laid across slopes to maintain an even level on each line. Because of their cost, trickle systems are primarily used for high-value crops, such as ornamental nursery stock, berries, or tree fruits.

Topography

The slope, orientation, and surroundings of a site have a profound impact upon its suitability for crop and livestock production. Some of the factors to consider include the topographical characteristics listed below.

Slope

Is the site level enough to accommodate the agricultural operation you are planning? Although a slope can improve air and water drainage, steep slopes increase erosion and interfere with cultural operations. Steep terrain also creates serious safety hazards when tractors or other equipment are used.

Air drainage

Adequate air drainage is important in minimizing frost damage, freezing injury, and disease problems. Low sites or those that are surrounded by dense stands of trees collect heavy, cold air and increase frost and freezing problems tremendously. Such sites also trap moist air and restrict air movement that is needed to dry off foliage and fruit after rains or irrigation. As a result, bacterial and fungal disease problems are greatly increased. Choose a site that has an outlet for cold, moist air. Gentle slopes or benches above the level of temperature inversions are optimum sites.

Light exposure

Sunlight provides all the energy green plants need for growth and survival. Anything that reduces light exposure, such as mountains, trees, or buildings, reduces the energy available to plants. Many crop plants require full sun to thrive.

Compass orientation

Sites with southern or western exposures warm more quickly in the spring and are warmer throughout the year than sites with northern or eastern exposures. Warm early spring temperatures encourage earlier growth and flowering, which may be desirable, but also increase the potential for frost damage. Planting deciduous tree crops on southwestern exposures increases the likelihood of sunscald on trunks and branches.

Proximity to large bodies of water

Open water is cooler than surrounding land in the spring and warmer during the fall and winter. Because of the moderating influence the water has on air temperatures, coastal areas, even in the north, are characterized by mild climates and long growing seasons. Cool air blowing in from the ocean or large lakes delay both blooming in the spring and frosts in the fall, thereby reducing the likelihood of frost damage. Once water freezes, however, its moderating influence on temperature is lost.

Because prevailing winds in the northern hemisphere move from west to east, sites along eastern shores experience a greater moderating effect than those on western shores. However, an important point to remember is that the amount of influence a body of water has on a site is dependent upon its size. The climate in northern Idaho is moderated by the Pacific Ocean hundreds of miles away; a few miles further east in Montana the climate is largely impacted by continental air masses from the arctic. Locations there are much colder. Lakes in Idaho are small and have little influence upon temperatures more than a few

hundred yards to a few miles away. Unless they serve as an air drainage from a warm area, rivers seldom have much of an influence upon air temperatures more than a few hundred yards from the water.

Pests and diseases

Few things are more frustrating than working hard all season only to have your crop or livestock wiped out by pests or diseases. In many instances, however, proper site and crop or livestock selection can greatly reduce pest and disease problems. Find out about the pests, weeds, and diseases that are endemic to the area in which you're interested. Insects, nematodes, mites, voles, gophers, deer, elk, and even bear can wreak havoc in farming operations.

If nematodes are a problem in your area and you plan to raise susceptible crops, have the soil on prospective sites tested for nematodes. Although fumigation can be used to control nematodes, selecting a site free of these pests is an even better control method. If you're planning a spruce nursery, you may prefer a site that is not surrounded by Douglas-fir, an alternate host of the spruce gall aphid. Planting black currant cultivars that are not resistant to white pine blister rust on a site surrounded by white pine is an open invitation to problems. Sites that have or are surrounded by tall trees are poor locations for berry crops because birds roost in the nearby trees and feed on the berries. If you plan to raise specialty livestock, make sure that your site is free from toxic plants and protected from predators.

One class of pest merits special attention. In many regions of Idaho, deer and elk frequently cause substantial crop losses. Berry and young tree fruit crops, ornamental nursery stock, vegetables, forages, small grains, and young poplar woodlots are particularly susceptible to predation, even in populated areas. The only effective method of keeping these pests out of a field is to install a tall fence or a system of shorter fences. Before purchasing a site, determine if deer or elk predation might be a problem. If it is, figure the cost of fencing into your budget.

Another frequently forgotten factor in site selection is toxic plants. Idaho is home to a number of plants that can be poisonous or injurious to people and livestock, ranging from poison ivy and stinging nettle to water hemlock and nightshade. Poisonous weeds are a special concern in U-pick and livestock operations, but can present problems to all farm workers and visitors. Also bear in mind that if any person on your property is poisoned or injured, whether they have your permission to be there or not, you may be held liable. Find out what dangerous plants are in your area and look for them when evaluating sites.

Nearby industry and agriculture

When evaluating a site, always take a look at the neighbors. Pesticide vapors, spray drift, surface runoff water contaminated with herbicides and other pesticides can kill or injure susceptible plants and make crops unmarketable. The senior author has found herbicide damage to ornamental nursery stock several miles away from grain fields where phenoxy herbicides were used for broadleaf weed control. Contamination from other sites can make it difficult or impossible to maintain organic farming certification standards. Pests, weeds, and diseases can also spread from adjacent fields, woods, and windbreaks. Having a neighbor can be a great help, but be sure it's a good neighbor who takes care of his or her land.

Crops and livestock can be adversely affected by air pollution. Pollutants often associated with crop damage include ozone, sulfur dioxide, oxides of nitrogen, peroxyacyl nitrate, and fluorides. Smoke or smog impact plants by reducing light intensity and, thereby, photosynthesis. In rural locations where gravel or dirt roads are common, large amounts of dust from unpaved roads can contaminate crops and interfere with livestock operations.

History of the site

In purchasing a site, what you see is not necessarily what you get, and what you can't see can hurt you. For example, if you plan to grow berry crops, you certainly don't want to plant in a site that has been used to grow potatoes, tomatoes, eggplant, cherries, or other hosts of verticillium wilt. While some soil diseases can be controlled by fumigation, the process is expensive, does not eliminate all pests and diseases, and can actually create serious problems by killing off beneficial organisms.

Previous pesticide use can have dire consequences for all growers, especially those who want to meet organic certification standards. During the earlier part of this century, mercury and arsenic-based pesticides were commonly used, especially in orchards.

Although now banned, those pesticides are very persistent in the soil and can contaminate present crops, making organic certification impossible. Some herbicides are also very persistent and can create production trouble for years.

Toxic waste is another serious problem. In New Jersey, for example, a fruit grower planted more than 40 acres of peaches on land he later found out was a toxic waste landfill. He spent years bringing the orchard into full production. When toxic chemicals began leaking out of the landfill and into nearby streams, the entire orchard was quarantined and the

crop could not be sold.

Buried storage tanks have a limited life and will eventually rust or rot out and leak. Because buried tanks are out of sight, the first indication of trouble may be the appearance of oil or other pollutants in nearby ground or surface waters. Cleanup of contamination from toxic waste and leaking underground tanks is difficult and expensive. In addition to lost crops, property owners in such situations may be liable for cleanup costs and both civil and criminal penalties. Never buy in the blind. What's out of sight should not be out of mind.

Roads and access

Road access is critical to virtually all farming operations. For example, if you plan to grow Christmas trees, you'll need winter access for shipping trees out or for bringing U-cut customers in. If you plan to ship raspberries, a paved road will give a smoother, cleaner ride than a gravel road. Adjacent dirt or gravel roads can create dust contamination in any farming operation.

There are many questions you should ask yourself about roads and access. When will you need access to your site? Will local roads and highways be accessible when you need them? Are the roads suitable for your intended vehicles and product? Who is responsible for maintaining the roads? Will you have to pay for road maintenance, and if so, how much? Will your farming operation damage the roads and adjacent areas? Who provides weed control along your adjacent roads, and will their control measures adversely affect your farming operation? Are there residents or businesses along your roads who might be disturbed by or complain about traffic to and from your site? Can you safely and economically transport your product to market? Can you provide safe, adequate, and convenient parking for your employees and customers?

Marketing

If you plan to direct-market your product through a roadside stand or on-farm sales, you should have a highly visible location that is easily accessible from a main thoroughfare and provides ample and convenient parking. Before opening a stand, determine if there is sufficient traffic in the right season and at the right times of day to support the stand, and whether the traffic is made up of people who are likely to stop and buy your product. Make sure that potential customers can see the stand soon enough to stop safely and comfortably. Evaluate the site critically and ask yourself if it is conducive to shopping, or is it surrounded by junkyards, dilapidated buildings, or malodorous industries.

Utilities

Are you going to need electricity or gas to power pumps, refrigerators, heaters, lights, or other equipment? Are you going to need a telephone? How much will installation and use of the utilities cost? Will your operation generate waste products that will have to be removed by a commercial firm? These are all questions that should be answered before you begin looking for a site.

Support services

The days of trekking into the wilderness and carving out a farm with nothing but a strong back and sharp ax are gone. Successful farming operations today are complex and generally require interaction with many other businesses and agencies.

Make sure you have convenient sources for supplies, equipment, and equipment service. If you are raising livestock, you will also need a veterinarian nearby who is experienced with the stock you plan to raise. Find out if the local extension office has the expertise and resources to support your needs for information.

If your commodity is suitable for processing, find out if there are businesses or individuals in the area who can process it. If you plan to do the processing yourself, find out if there is a commercial kitchen available where you can legally produce your own value-added product.

If there are similar businesses in the area, there is the potential to develop a cooperative to facilitate purchases and marketing. Established producers are also a good source of technical information dealing with production and marketing.

Labor

One of the realities for specialty farmers in Idaho is that a skilled labor force is often unavailable locally. In recent years, some good crops have literally rotted in the fields for lack of harvesters.

How much labor will you will need and when will you need it? Will workers need special skills? If so, can unskilled laborers be trained adequately to carry out necessary operations? Who will provide the training and how much will it cost?

Migrant farm workers are an important part of commercial agriculture in much of the United States, but are often in short supply in parts of Idaho. If you need migrant workers, how will you attract them to

your operation? In some cases, migrant labor brokers may be available in your area. If migrant workers are available, however, you must still consider how they will be housed and transported. There are strict government regulations that pertain to hiring migrant workers, the first being that the workers are in the United States legally. Housing requirements are also very specific.

Legal considerations

Living in the "land of the free" does not mean the freedom to do whatever you like on your own property. Local, state, and federal regulations set guidelines for and limits upon many agricultural endeavors. Find out about applicable regulations before beginning any operation.

Local regulations

Before you talk with real estate agents and visit sites, talk with a representative of the planning and zoning board in the city or county in which you intend to operate. Explain what you want to do and find out what local regulations apply. Some Idaho counties, for example, are zoned primarily as residential, which can limit on-farm and roadside sales and related activities. Make sure zoning regulations allow you not only to carry out planned operations now, but also allow you to grow and diversify in the future. Beware of establishing yourself too near city boundaries. In Idaho, cities have been able to annex farmland against the owners' objections. Running a farm within city limits may not be possible.

Taxes are an unpleasant reality for all business owners. Find out what taxes will be assessed at your prospective locations and whether tax incentives are available for new businesses.

Some communities prohibit the use of certain equipment (trailer houses, for example) or require that certain improvements be made on property. Find out in advance what you will be allowed to do, what you will be required to do, and whether you can afford the location and/or operation.

Federal regulations

If the land you are interested in is classified as wetland or as highly erodible, it may be regulated by federal law and you may not be able to farm or otherwise alter the site. While adjacent surface water can be an asset if you can gain access to it for irrigation or livestock, the water can be a liability if you have to meet legal requirements to protect it; such requirements can be difficult and expensive.

Never purchase any property without first consulting federal and local legal representatives to determine your legal responsibilities and restrictions. Find out if there are any liens or restrictive covenants on your prospective site. Be sure you can really do all that you want and need to in connection with your intended enterprise.

The bottom line

The tone of this publication may seem negative. It's purpose, however, is not to discourage prospective entrepreneurs but to help guide them through the fact-finding, planning, and decision-making steps that should precede the start of any venture. Specialty farming in Idaho does have potential, but success only comes through extensive planning and hard work. Identifying a viable enterprise, market, and site are critical steps in achieving success.

For further reading

Of particular interest to entrepreneurs may be this publication's companion piece, EXT 743, *Specialty Farming in Idaho: Is It for Me?* Many publications on farm business management and production practices, including enterprise budgets, are available from the University of Idaho. Contact the University of Idaho Extension office in your county or Agricultural Publications, University of Idaho, P.O. Box 442240, Moscow, Idaho 83844-2240, (208) 885-7982.

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Appendix A: Idaho's climate

The information in the following tables will give you an idea of what the climate is like in each Idaho county. However, as climate is no respecter of legal boundaries, sites within a particular county may vary substantially. Thus, the climate of the site listed in the table may be quite different from one you are considering. Take the time to find out as precisely as possible what the climate is at that location. Weather patterns vary over time, so be sure to review climatological records for at least the past 20 years.

Note that data collection periods varied between sites from 23 to 92 years. In some cases, not all of the information required for these tables was available for a particular site. When that occurred, data from similar sites within the same county were used.

For help in obtaining weather information for your location, write to the Department of Biological and Agricultural Engineering, College of Agriculture and Life Sciences, University of Idaho, Moscow, Idaho, 83844-0904.

Table 1. Climate summary for Idaho counties.¹

County	Site	Elevation (feet)	Temperature extremes (°F)				Precipitation (inches)		
			Average minimum	Average maximum	Record minimum	Record maximum	Minimum 1 year in 10	Annual ¹ total	Annual ² snowfall
Ada	Boise	2,840	4	104	-25	113	-13	12	22
Adams	Brownlee Dam	1,840	5	108	-13	112	-9	17	20
Bannock	McCammon	4,770	ISD ³	ISD	-28	103	ISD	16	40
Bear Lake	Montpelier	5,960	-21	94	-34	100	-31	13	55
Benewah	St. Maries	2,220	-8	100	-29	109	-24	28	64
Bingham	Fort Hall	4,460	-17	98	-37	103	-30	11	22
Blaine	Ketchum	5,890	-28	97	-37	97	-38	17	103
Boise	Idaho City	3,970	-17	100	-38	109	-31	25	88
Bonner	Sandpoint	2,120	-10	95	-37	104	-25	29	60
Bonneville	Idaho Falls	4,730	-18	97	-38	104	-31	10	37
Boundary	Bonniers Ferry	1,860	-9	96	-33	104	-19	20	71
Butte	Arco	5,330	-25	95	-45	99	-37	10	35
Camas	Hill City	5,090	-26	97	-44	102	-38	13	53
Canyon	Caldwell	2,370	-3	103	-34	112	-21	11	23
Caribou	Grace	5,550	-20	92	-40	99	-32	32	54
Cassia	Burley	4,160	-11	98	-30	105	-23	12	23
Clark	Dubois	5,450	-15	95	-31	102	-25	12	51
Clearwater	Headquarters	3,140	-14	97	-28	102	-26	42	103
Custer	Mackay	5,900	-17	94	-33	104	-27	12	34
Elmore	Glenns Ferry	2,510	-5	106	-26	110	-17	7	14
Franklin	Preston-Kach	4,820	-15	94	-31	101	-31	15	26
Fremont	Ashton	5,260	-21	92	-37	100	-31	19	93
Gem	Emmett	2,370	-4	103	-27	109	-20	13	11
Gooding	Bliss	3,280	-6	102	-35	110	-21	9	24

¹All temperature and snowfall information was compiled from the Northwest Hydrologic Information System (NHIMS), unless otherwise indicated.

²Precipitation information was copied from *1991 Idaho Agricultural Statistics*, 1991, Idaho Agricultural Statistics Service, unless otherwise indicated.

³ISD means that insufficient data are available for these categories. The information that is available for Bannock County was provided by the Soil Conservation Service (SCS), Idaho.

Table 1. (continued).¹

County	Site	Elevation (feet)	Temperature extremes (°F)					Precipitation (inches)	
			Average minimum	Average maximum	Record minimum	Record maximum	Minimum 1 year in 10	Annual ¹ total	Annual ² snowfall
Idaho	Grangeville	3,360	-9	98	-25	108	-22	23	58
Jefferson	Hamer	4,790	-29	97	-48	102	-40	8	32
Jerome	Jerome	3,740	-8	102	-24	108	-19	10	16
Kootenai	Coeur d'Alene	2,160	-6	100	-30	109	- 22	17	54
Latah	Moscow	2,660	-8	98	-42	109	-22	25	54
Lemhi	Salmon	3,950	-19	101	-37	106	-35	5	6
Lewis	Nezperce	3,150	-11	96	-33	104	-21	23	52
Lincoln	Richfield	4,310	-16	96	-36	105	-28	11	22
Madison	Rexburg	4,920	-24	96	-36	102	-36	9	70
Minidoka	Rupert	4,200	-12	100	-33	105	-26	8	22
Nez Perce	Lewiston	1,440	-1	104	-22	115	-16	13	19
Oneida	Malad City	4,470	-18	99	-35	102	-30	13	41
Owyhee	Bruneau	2,530	-4	105	-32	111	-16	4	8
Payette	Payette	2,150	-6	103	-26	109	-21	11	11
Power	Pocatello	4,450	-14	99	-33	104	-28	10	44
Shoshone	Kellogg	2,320	-9	101	-36	111	-21	32	60
Teton	Driggs	6,120	-26	91	-50	97	-37	16	77
Twin Falls	Twin Falls	3,670	-6	99	-30	107	-20	9	28
Valley	Cascade	4,900	-21	94	-36	100	-33	21	101
Washington	Weiser	2,103	-6	102	-29	107	-25	8	21

¹ All temperature and snowfall information was compiled from the Northwest Hydrologic Information System (NHIMS), unless otherwise indicated.

² Precipitation information was copied from *1991 Idaho Agricultural Statistics*, 1991, Idaho Agricultural Statistics Service, unless otherwise indicated.

Table 2. Spring and fall freezing dates for three temperature thresholds.¹

County	Site	24°F threshold			28°F threshold			32°F threshold		
		Spring	Fall	Growing season days	Spring	Fall	Growing season days	Spring	Fall	Growing season days
Ada	Boise	Apr 3	Nov 14	224	Apr 22	Oct 25	185	May 6	Oct 8	154
Adams	Brownlee Dam	Apr 14	Oct 16	185	May 1	Oct 4	155	May 17	Sep 24	129
Bannock ²	McCammon	Apr 22	Oct 11	172	May 15	Sep 24	132	May 30	Sep 11	104
Bear Lake	Montpelier	May 9	Sep 24	137	May 30	Sep 13	106	Jun 15	Aug 30	76
Benewah	St. Maries	Mar 30	Oct 26	209	Apr 23	Oct 5	164	May 16	Sep 19	125
Bingham	Fort Hall	Apr 25	Oct 10	168	May 8	Sep 26	141	May 25	Sep 13	111
Blaine	Ketchum	Apr 29	Oct 9	162	May 19	Sep 23	126	Jun 10	Sep 11	93
Boise	Idaho City	May 11	Sep 28	139	Jun 4	Sep 12	99	Jun 23	Aug 19	57
Bonner	Sandpoint	Apr 5	Oct 21	199	May 2	Oct 3	154	May 19	Sep 13	117
Bonneville	Idaho Falls	Apr 17	Oct 15	180	May 3	Oct 2	152	May 22	Sep 20	121
Boundary	Bonnars Ferry	Apr 5	Oct 20	197	Apr 27	Oct 8	163	May 12	Sep 20	130
Butte	Arco	May 4	Oct 2	151	May 12	Sep 19	130	Jun 10	Sep 6	88
Camas	Hill City	May 15	Sep 21	128	Jun 4	Sep 9	97	Jun 22	Aug 20	59
Canyon	Caldwell	Apr 3	Oct 26	206	Apr 19	Oct 12	175	May 5	Sep 25	143
Caribou	Grace	Apr 28	Oct 8	162	May 16	Sep 25	132	Jun 6	Sep 12	98
Cassia	Burley	Apr 16	Oct 11	178	May 7	Oct 2	148	May 13	Sep 20	129
Clark	Dubois	Apr 25	Oct 12	169	May 8	Sep 30	145	May 28	Sep 18	113
Cleanwater	Headquarters	Apr 22	Oct 7	167	May 20	Sep 21	123	Jun 14	Sep 2	79
Custer	Mackay	Apr 30	Oct 10	162	May 18	Sep 26	131	Jun 8	Sep 13	97
Elmore	Glenns Ferry	Apr 14	Oct 14	183	May 3	Oct 9	159	May 16	Sep 28	135
Franklin	Preston-Kach	Apr 18	Oct 20	185	May 5	Oct 3	151	May 20	Sep 22	124
Fremont	Ashton	Apr 29	Oct 2	155	May 16	Sep 18	125	Jun 11	Sep 4	85
Gem	Emmett	Apr 2	Oct 26	207	Apr 24	Oct 13	172	May 17	Sep 29	135
Gooding	Bliss	Apr 18	Oct 18	183	May 6	Oct 4	151	May 20	Sep 21	124

¹ Dates represent a 50 percent possibility of the indicated temperatures occurring after the dates given for spring, and before the dates given for fall. The information presented here was compiled from *Spring and Fall: Freezing Temperatures and Growing Seasons*, 1978, University of Idaho, College of Agriculture, Agricultural Experiment Station Bulletin 494, unless otherwise indicated.

² The information for Bannock County was compiled from *Crop Weather Calendars for Southern Idaho*, 1975, NOAA, National Weather Service Office for Agriculture and the University of Idaho Agricultural Extension System.

Table 2. (continued).¹

County	Site	24°F threshold			28°F threshold			32°F threshold		
		Spring	Fall	Growing season days	Spring	Fall	Growing season days	Spring	Fall	Growing season days
Idaho	Grangeville	Apr 8	Oct 25	199	Apr 28	Oct 6	161	May 17	Sep 21	127
Jefferson ³	Hamer	Apr 19	Oct 8	172	Apr 30	Sep 19	142	May 14	Sep 3	112
Jerome	Jerome	Apr 8	Oct 23	197	Apr 29	Oct 12	165	May 14	Sep 30	139
Kootenai	Coeur d'Alene	Apr 11	Nov 3	205	Apr 26	Oct 14	171	May 15	Sep 25	133
Latah	Moscow	Mar 19	Oct 31	226	Apr 18	Oct 12	176	May 13	Sep 25	135
Lemhi	Salmon	Apr 28	Oct 6	160	May 7	Sep 20	126	Jun 4	Sep 9	97
Lewis	Nezperce	Apr 11	Oct 24	195	May 3	Oct 2	152	May 19	Sep 21	124
Lincoln	Richfield	May 2	Oct 9	159	May 15	Oct 2	139	May 28	Sep 17	112
Madison ³	Rexburg	Apr 5	Oct 27	205	Apr 30	Oct 16	169	May 13	Sep 16	126
Minidoka	Rupert	Aug 12	Oct 23	194	Apr 28	Oct 11	165	May 10	Sep 25	137
Nez Perce	Lewiston	Mar 7	Nov 23	260	Apr 2	Oct 29	209	Apr 22	Oct 14	174
Oneida	Malad City	Apr 15	Oct 22	189	May 1	Oct 8	159	May 19	Sep 22	126
Owyhee	Bruneau	May 26	Sep 6	103	Jun 13	Aug 19	67	Jun 29	Jul 28	30
Payette	Payette	Apr 3	Oct 24	203	Apr 22	Oct 13	174	May 9	Sep 29	143
Power	Pocatello	Apr 12	Oct 16	186	Apr 29	Oct 6	159	May 16	Sep 20	127
Shoshone	Kellogg	Apr 1	Oct 27	208	Apr 21	Oct 11	173	May 14	Sep 24	133
Teton	Driggs	May 12	Sep 25	135	May 27	Sep 10	105	Jun 20	Aug 28	68
Twin Falls	Twin Falls	Apr 8	Oct 12	195	Apr 24	Oct 6	164	May 13	Sep 22	131
Valley	Cascade	May 4	Oct 1	150	May 29	Sep 17	110	Jun 14	Sep 2	79
Washington	Weiser	Apr 15	Oct 18	185	Apr 18	Oct 7	162	May 15	Sep 24	132

¹ Dates represent a 50 percent possibility of the indicated temperatures occurring after the dates given for spring, and before the dates given for fall. The information presented here was compiled from *Spring and Fall: Freezing Temperatures and Growing Seasons*, 1978, University of Idaho, College of Agriculture, Agricultural Experiment Station Bulletin 494, unless otherwise indicated.

³ Information for these counties was compiled from information contained in the Northwest Hydrologic Information System (NHIMS).

Appendix B: Enterprise checklist

This checklist is provided for your convenience in planning an enterprise. Its usefulness will be enhanced if first you read and consider the preceding text and its companion publication, EXT 743, *Specialty Farming in Idaho: Is It for Me?*

Major considerations

The product

1. What is the intended crop or livestock?
2. Climatic and cultural needs of your crop or live stock?
3. Pests, diseases, and other serious concerns?
4. Is product intended for the fresh or processing market?
5. If product will be processed, will you:
 - a. ship it to a processor?
 - b. create your own value-added product?

Your resources

1. Skills
 - a. Do you have production and marketing skills?
 - b. Will you need to hire a manager?
 - c. Is a qualified manager available?
2. Capital
 - a. Do you have the necessary capital?
 - b. Can you obtain sufficient capital?
 - c. How much will obtaining capital cost you?
 - d. What financial rate of return do you expect?
3. Land
 - a. Do you now own or rent a suitable farm site?
 - b. How much does it cost to own or rent the site?
 - c. How much will it cost to buy or rent a site?
 - d. Any required site improvements?
 - e. How much will site improvements cost?
4. Facilities
 - a. What facilities will your enterprise require?
 - b. Can you build some yourself?
 - c. What will required facilities cost?

Marketing

1. Where is your market?
2. How will you get your product there?
3. Roadside stand
 - a. Sufficient traffic of people who will buy your product?
 - b. Stand easily visible?
 - c. Easy access and parking?
 - d. Surroundings conducive to marketing?
 - e. Can you place advertising signs along the road?
4. Local direct sales
 - a. Is there a large enough population nearby?
 - b. Will local businesses purchase your product?

5. Export sales
 - a. Is your product suitable for shipping?
 - b. Can you support an export business?
 - c. What is your access to truck and air transportation?
 - d. How much will it cost to export your product?

Labor

1. Labor needs, resources, and costs
 - a. How much labor is needed and at what times of the year?
 - b. Will workers come from local or migrant sources?
 - c. Is there a sufficient labor pool for your needs?
 - d. What will the cost of labor be?
2. Legal requirements
 - a. Can you meet all legal requirements for labor?
 - b. Are there sanitary facilities available?
 - c. Is shelter available?
 - d. Is adequate and legal housing available?
 - e. Can you meet labor transportation needs?

Support services

1. Can you form a cooperative with other operations?
2. Are there:
 - a. sources for equipment and supplies nearby?
 - b. processing facilities available?
3. Is there:
 - a. a commercial kitchen available?
 - b. production and marketing technical support available?
 - c. an experienced veterinarian nearby?

Site Considerations

Climate

What is the:

1. length of the growing season.
2. minimum winter temperatures.
3. summer day and night temperatures.
4. spring and fall frost dates.
5. annual precipitation.
6. wind—direction, frequency, and velocity of prevailing winds.

Soil

What is the:

1. depth and texture.
2. drainage and water-holding capacity.
3. soil pH and calcium content.
4. organic matter content.

Water

1. How much and what quality of water will you need?
2. What are your water rights?
3. Available sources of water:
 - a. well—how deep? capacity?
 - b. spring—seasonal or year-round? capacity?
 - c. stream or lake—water rights? seasonal?
 - d. farm pond—capacity? seasonal?
4. How much will accessing water cost?
5. What type of irrigation system is desired?
 - a. flood or furrow.
 - b. overhead sprinklers.
 - c. trickle or drip.

Topography

What is the:

1. slope.
2. air drainage.
3. light exposure.
4. compass orientation.
5. proximity to large bodies of water.

Pests and diseases

1. What are the pests and diseases endemic to area?
2. What are the pests and diseases your product is particularly vulnerable to?

History of the site

1. Previous crops or livestock produced on the site.
2. Previous pesticide use on the site.
3. Are toxic chemicals or buried storage tanks a problem?

Access and utilities

1. Roads
 - a. During what seasons will roads be used?
 - b. Will you have access whenever you need it?
 - c. What types of vehicles use roads?
 - d. Are roads suitable for transport of your commodity?
 - e. Who provides and pays for road maintenance?
 - f. Will your operation adversely impact the roads?
 - g. Other residences or businesses along your roads?
 - h. Can you safely and economically transport your product to market?
2. Is suitable parking available?
3. Utilities
 - a. Will electricity, natural gas, and telephones be needed?
 - b. Are these utilities available?
 - c. How much will installation and use cost?

Zoning, taxes, and ordinances

1. Zoning
 - a. Will county and city ordinances and zoning regulations allow you to operate your business?
 - b. Does the USDA Natural Resources Conservation Service regulate your site because it is highly erodible or designated wetland?
2. Taxes
 - a. What taxes will be assessed at your location?
 - b. Are tax incentives available?
3. Is your site likely to be annexed?
4. Are any improvements required?
5. Are there any liens or restrictive covenants against your site?



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