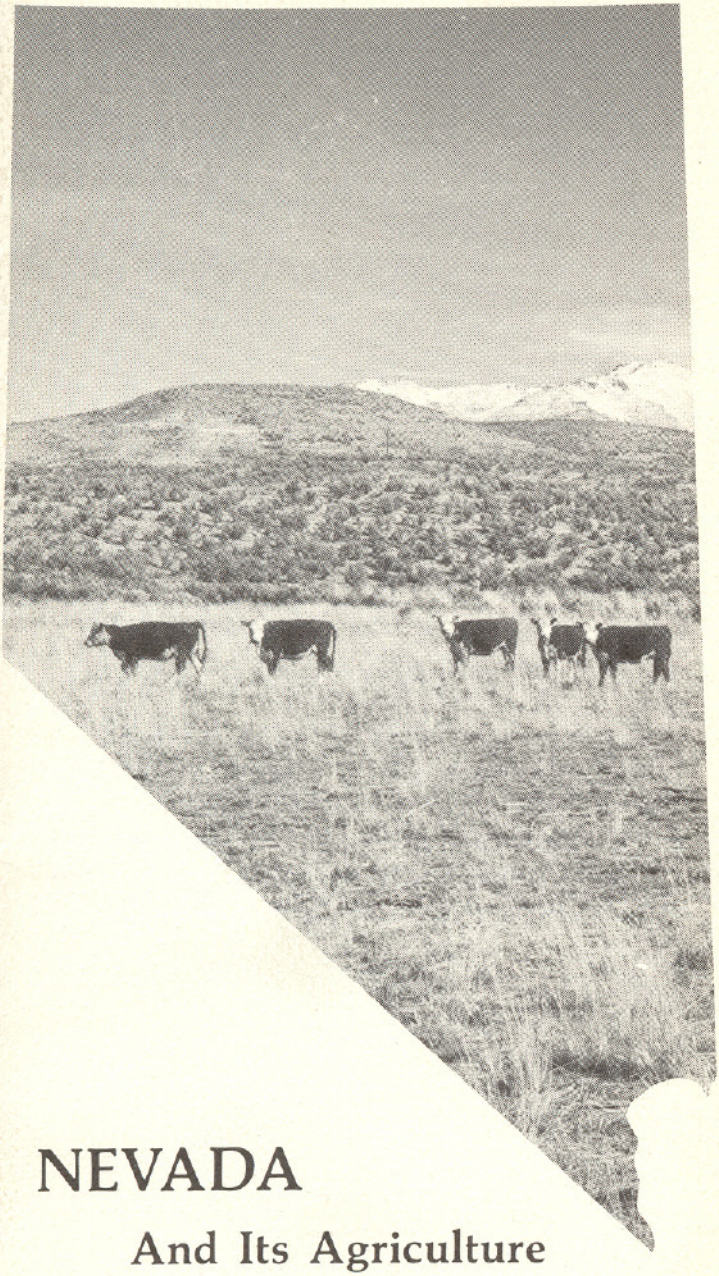

NEVADA

And Its Agriculture

Prepared by

NEVADA DEPARTMENT OF AGRICULTURE

Reno, Nevada

FOREWORD

you for your interest in agriculture. We have tried to questions that are most fre- asked about agriculture in ome of its history and the pro- ninistered by our department.

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NEVADA AND ITS AGRICULTURE

GENERAL

Nevada's agriculture is primarily livestock oriented and the production of forage and related feed crops to support its livestock industry comprises the bulk of Nevada's agriculture.

The only other major crop production is alfalfa seed and potatoes, with the major portion of the potato industry located in north central Nevada in Humboldt County adjacent to Winnemucca.

Nevada's 109,889 square miles of high desert country are made up of alkali wastes, grazing land and arable valleys. Despite Nevada's arid climate, excellent crops are produced where land can be irrigated.

Other than the livestock industry and the livestock forage and small grains, such as wheat, barley and oats, which are produced throughout all areas of the State, the map contained in this booklet shows a summary of other crops and areas produced.

In addition to these agricultural commodities, the State has five or six major producers of honey who supply honey to processors.

CLIMATE

Climatic conditions vary throughout the State. This, in turn, affects growing seasons and what can be grown. As an example, the southern portion of the State is in the 1800 to 2400 ft. elevation range with annual rainfall of less than four inches, while the northeastern portion of the State is in the 4500-up elevation category and annual rainfall ranges from 12 to 22 inches. Frost-free days in Southern Nevada will be as high as 300 days in some areas while the northeastern portion of the State will be down as low as 85 to 90 days. These are "on-the-average" figures.

FARMER TO CONSUMER AGRICULTURAL PRODUCE

Some occasional farmstands can be seen scattered throughout the State, usually in the late summertime, which offer some row crops, such as onions, corn, squash, melons, etc. Some of these move to the local markets. Generally speaking, there are no "pick-your-own" crop types of activities in the State.

HOME GARDENS, AGRICULTURAL EXTENSION SERVICE

The success of backyard gardens depends on location and climate which affects the growing seasons. They can fare well.

County Cooperative Agricultural Extension Offices through the University of Nevada are located throughout the State and provide valuable advice on which crops can be grown with the most amount of success within a particular area. This Extension Service furnishes information on 4-H, home economics, home and yard improvements and related subjects.

STATISTICAL DATA

This data is available through the Nevada Crop and Livestock Reporting Service, who gathers statistics for reporting on a summary of crops, livestock, prices and related agricultural data along with comparisons for recent years. A report is published annually by the U.S. Department of Agriculture, Economics, Statistics and Cooperatives Service in cooperation with the Division of Agriculture and Resource Economics, University of Nevada and Nevada State Department of Agriculture. Copies of this report may be obtained by request to the Agricultural Statistician, U.S.D.A.-E.S.C.S., % University of Nevada, Reno, Nevada.

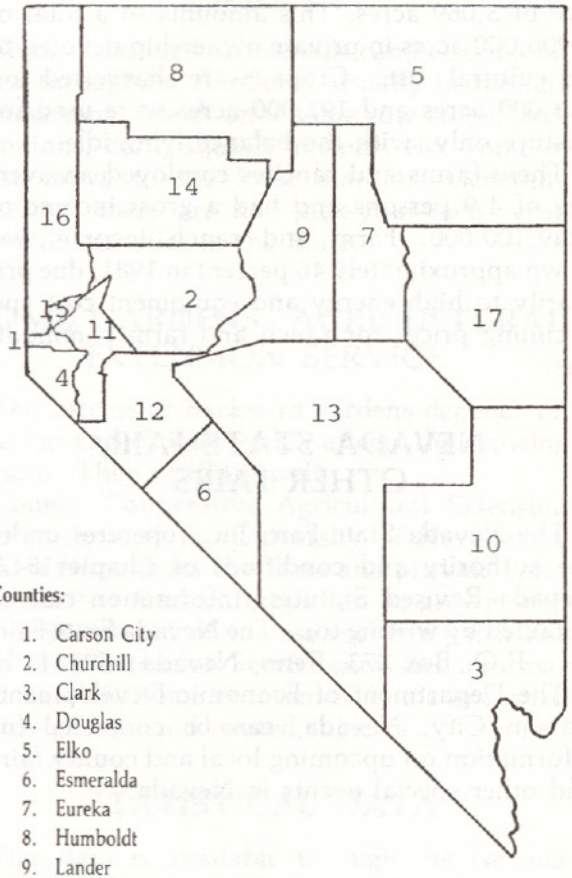
In 1982, there were approximately 2,900 farms and ranches in Nevada with an average size of 3,069 acres. This amounts to a total of 8,900,000 acres in private ownership devoted to agricultural use. Crops were harvested on 613,000 acres and 191,000 acres were used for pasture only, with the balance lying idle.

These farms and ranches employed an average of 4.9 persons and had a gross income of $249,100,000. Farm and ranch income was down approximately 46 percent in 1981, due primarily to high energy and equipment cost and declining prices for ranch and farm commodities.

NEVADA STATE FAIR, OTHER FAIRS

The Nevada State Fair, Inc., operates under the authority and conditions of Chapter 547, Nevada Revised Statutes. Information can be obtained by writing to: The Nevada State Fair, Inc., P.O. Box 273, Reno, Nevada 89504.

The Department of Economic Development, Carson City, Nevada, can be contacted for information on upcoming local and county fairs and other special events in Nevada.



Counties:

1. Carson City
2. Churchill
3. Clark
4. Douglas
5. Elko
6. Esmeralda
7. Eureka
8. Humboldt
9. Lander
10. Lincoln
11. Lyon
12. Mineral
13. Nye
14. Pershing
15. Storey
16. Washoe
17. White Pine

NOTE: Map intended to show agricultural activities and crops grown in counties but not necessarily particular areas of those counties.

Carson City:	*Alfalfa*
Churchill:	*Forage, Grains, *Melons, Row Crops*
Clark:	*Forage, Grains*
Douglas:	*Forage, Pasture, Grains*
Elko:	*Alfalfa, Grains, Pasture, Seed Potatoes*
Esmeralda:	*Forage, Grains*
Eureka:	*Forage, Grains, *Potatoes*
Humboldt:	*Alfalfa Seed, Forage, Grains*
Lander:	*Forage, Grains, Alfalfa Seed*
Lincoln:	*Forage, Grains, *Potatoes*
Lyon:	*Onions, Garlic, Corn*
Mineral:	*Forage, Grains*
Nye:	*Forage, Grains, *Melons, Row Crops, Pecans, Pistachio Nuts*
Pershing:	*Alfalfa Seed, Forage, Grains*
Storey:	*Potatoes, Onions*
Washoe:	*Forage, Grains, Onions, *Potatoes*
White Pine:	*Forage, Grains*

*Average less than 250 acres.

Forages/Grains grown in all areas of State. (Grains include wheat, barley, oats.) (Forages such as grass hay, alfalfa hay.)

Livestock in all areas of State where pasture and grazing available.

HISTORY, OTHER AGRICULTURAL DATA

(Portions reprinted from Nevada Magazine, No. 1, 1976, Bicentennial Edition)

In the spring of 1851, Colonel John Reese and 17 men were sent by Brigham Young from Salt Lake City to the part of Utah Territory known now as Nevada. They brought seed and grain and livestock to the foot of the Sierra, built an irrigation canal and plowed for crops. A year later the barley, wheat, turnips and watermelons that grew from their labors were sold to immigrants passing through to the promises of California.

The discovery of gold near Dayton, and the later unearthing of vast amounts of silver in Virginia City, brought forth many prospectors and entrepreneurs and a profitable market for beef. During the very dry winter of 1862, California ranchers drove their cattle across the Sierra into Nevada to feed. Many of these cattle were left behind to become the foundation of the mighty herds that later roamed the unfenced land and supplied the many flourishing mining camps.

At the end of the Sixties, sheep were driven in from the Midwest and Idaho. More cattle arrived from Texas, and the Nevada livestock industry expanded rapidly. Average annual precipitation varies from 2 to 15 inches, length of growing season lasts from 150 to 300 days, so livestock and forage production became Nevada's basic agriculture.

Nevada's arid land was not quite waterless despite its dry surface. With 254 separate valleys edged by mountains rising up to 13,145 feet, 70 percent of the precipitation fell on the peaks as snow which later flowed to waste. This resource could be channeled for agricultural use. The Federal Reclamation Act, passed in 1902, focused attention on America's desert lands; irrigated acreage soon increased.

The Newlands Project, first of several Nevada irrigation plans, was aimed at changing the sagebrush flats around the Fallon area of Churchill County into a farmer's dream. A canal was begun in 1903 to divert Truckee River water which would be held at Lake Lahontan Dam and Reservoir, finally completed in 1915. (During the same period, a dam was built at Tahoe City to raise Lake Tahoe six feet and to supply power and to hold additional irrigation water.)

Rye Patch Reservoir was begun in 1936 to retain Humboldt River water to irrigate the valley at Lovelock. The year before, Boulder Dam (now known as Hoover) was completed and multi-use Lake Mead held back Colorado River water to irrigate parts of Arizona, California, Nevada and Mexico. Hoover Dam also supplied hydroelectric power to Las Vegas and a wide area of the Southwest.

Fallon's soil held too many minerals for farming but it could be leached with water to rinse the salts through the earth. The area was level and easily farmed and quickly became an important livestock and hay producing area. Today, the land around Fallon has several beef ranches, dairymen, several large feedlots and farmers growing corn for sileage, alfalfa, hay, "Hearts of Gold" cantaloupe and other field crops. Some watermelons grown in the area have weighed up to 50 pounds.

Each Nevada valley has its own characteristics of climate and moisture. Smith and Mason valleys in Lyon County are the most fertile in the State, and the south's Muddy River Valley has a nine-month growing season where farmers can cut up to six crops of hay. In Clover Valley, Elko County, where 15 inches of moisture is normal, temperatures vary from —20 degrees F. to highs in the 90's; in Pahrump Valley, Clark County, two inches of rain is normal, and the growing season is longer with summer temperatures that can soar to 115 degrees.

Alfalfa seed is Lovelock's biggest crop; hay for feed is second, and there is also a large feedlot on the edge of town. There is a plant in town that cleans, bags and ships alfalfa seed. One grower sold a million pounds of seed in 1975 which was 20 percent of Lovelock's and 1 percent of the nation's total crop.

Today, much of the land in the State is federal public domain (approximately 86 percent), and leased to ranchers by the Bureau of Land Management for grazing livestock on a permit basis. Nine million acres are privately owned and used for livestock and crops. Presently, 825,000 acres are in irrigated farmland using water channeled from reservoirs or pumped from wells using subterranean water. More than half of that artificially watered land is used for growing 900,000 tons of alfalfa and other types of hay to winter feed the cattle. A large percentage of Nevada's hay is sold in California.

The Nevada Division of Water Resources issues water permits for drilling wells to ranchers and farmers, but only in amounts the water can be recharged. The Division has to know how much water is available and how long it will last. For each of the State's valleys, the Division has a written report which is available to the public.

The Dutch Flat section north of Winnemucca is a typical area where water permits are restricted. Winnemucca Farms (Kracaw & Sons) owns 15,000 acres of uniform ground where they grow Russett Burbank potatoes rotating with wheat, beans and barley. The area has good soil, excellent climate, quality water and disease-free growing conditions.

Grain production has increased in Humboldt County primarily because the potato growers use grain for crop rotation. In 1969, 2,649 acres of grain were planted and five years later county records showed 14,000. In 1975, there were 22,000 acres.

The trend for the future is in fewer and larger ranches and farms. Most of the large beef outfits are found in Elko County, sheep in White Pine County, whereas the biggest dairy herds are in the south near Las Vegas. The average Nevada ranch size is 4,500 acres; the State ranks second in the nation to Arizona in the largest size units.

Alfalfa is grown in Pahrump Valley and many southern farmers are trying experimental plantings of almonds and pistachios.

With irrigation, several of Nevada's once brown valleys have become profuse with crops, and its agriculture has progressed into a multi-million dollar industry.

NEVADA STATE DEPARTMENT OF AGRICULTURE

A small beginning of the department began about 1907, however, officially the organization formed in April, 1915.

The Nevada Department of Agriculture, established by Chapter 561, Nevada Revised Statutes, is a regulatory and service state agency. The legislative purpose or intent for the department is to benefit and to promote the welfare of all the people of the State and to promote the efficient, orderly and economic conduct of the various activities for the encouragement, advancement and protection of the livestock and agricultural industries of the State.

The basic organization and duties of the department created under the law are: (1) A State Board of Agriculture consisting of members appointed by the Governor actively engaged in agriculture, who formulates the policy of the department, adopts, amends and rescinds rules and regulations, advises and makes recommendations to the Governor or Legislature relative to the livestock and agricultural policy of the State and reports to the Governor or Legislature on all matters it deems pertinent and on specific requested subject matters. (2) An Executive Director who directs and supervises all administrative and technical activities and programs administered by the department. He is also appointed as the State Sealer of Weights and Measures and the State Quarantine Officer. (3) A minimum of two divisions and authority for other divisions as the Executive Director may create.

There are four divisions within the Nevada State Department of Agriculture: The Division of Administration, the Division of Animal Industry, the Division of Brand Inspection and the Division of Plant Industry.

DIVISION OF ADMINISTRATION

This division supplies the administrative direction, policies of the department and support for the various programs carried on by the other divisions.

The division administers a Junior Agricultural Loan Program which was developed to assist and encourage members of farm youth organizations and young men and women to pursue worthwhile agricultural projects through loans to finance them.

DIVISION OF ANIMAL INDUSTRY

This division is vested by statute with the responsibility to manage activities of the department pertaining to the protection and promotion of the livestock industry. This responsibility is carried out by a staff of veterinarians, medical technicians and support personnel. Programs and policies are formulated and directed from the State Office of the Department. The division also employs the services of practicing veterinarians in the field as needed.

Animal health programs deal with the diagnosis, control and eradication of infectious, contagious and parasitic diseases of livestock and poultry, and offers consultation to the practicing veterinarians, livestock industry and all cooperating agencies in the State. The U.S. Department of Agriculture cooperates with animal health programs in the major disease eradication activities. The policy followed under this category is that of bringing to the aid of an individual a modern scientific service to meet his problems of animal disease. One of the most important responsibilities in animal health is that of preventing the introduction of dangerous livestock diseases into the herds of Nevada. Surveillance of animals imported into the State and certification of health of animals consigned to other states and foreign countries is a continuing activity.

Specifically, preventing the introduction of dangerous livestock diseases into the herds of Nevada is accomplished by: inspection of livestock entering the State; enforcement of regulations requiring proper disposal of livestock dead from disease; insuring proper sanitary environment at livestock auction yards, feedyards and concentration areas; control of biological products and cooperation with the U.S. Department of Agriculture in eradication of diseases such as tuberculosis, brucellosis, hog cholera and scabies.

Animal Disease Laboratory—This laboratory provides facilities for the diagnosis and identification of animal disorders through varied technical, determinative procedures. These procedures embody the areas of virology, bacteriology, clinical hematology, serology, parasitology, chemistry, toxicology and histopathology. Laboratory activity also includes the identification of diseases of animals transmissible to man. The diagnosis and reporting of an animal disease that has public health significance alerts the human medical community to its presence so that proper treatment or control methods may be employed.

Specifically, the Animal Disease Laboratory provides the following services: It is the official laboratory for the State-Federal Cooperative Animal Disease Eradication Programs and the official laboratory for the diagnosis of rabies. Personnel of the laboratory act as consultants to the practicing veterinarians of the State. Diagnostic services for the livestock industry and veterinarians of Nevada is performed. Investigations into improved procedures and techniques for animal disease control and diagnostic testing are performed. It is a survey agency for animal disorders found endemic in all livestock areas. It also makes public health recommendations on diseases that may be transmitted from animals to man.

DIVISION OF BRAND INSPECTION

The Division of Brand Inspection is vested by statute with the task of carrying out the responsibilities of the department relating to the protection of cattle, horses and other livestock from

theft and protecting the producer in every way possible by recording and keeping account of all brands in the State; by providing brand inspectors throughout the State to make inspections; by enforcing all state livestock laws in a fair and equitable manner; by assisting other states in the enforcement of their livestock laws and by requiring licensing of those dealing in livestock.

The division maintains the legal records of all livestock brands in the State as well as the transfer of title records. The brand inspectors inspect animals which are being moved across brand inspection district boundaries (including state lines), upon change of ownership, consignment movement of livestock from pasture to pasture across district lines for grazing purposes and before slaughter. The division publishes an official brand book of records every four years with supplements being published in the interim.

Specifically, the division carries out the following programs: brand inspection; livestock auction yard bonding and licensing; processing of estray livestock; investigation of livestock killed by railroads and determination of ownership of same; enforcement of the licensing and bonding of those dealing in livestock; livestock theft control; recording; re-recording and transfer of livestock brands and publication of livestock brand book and current supplements.

DIVISION OF PLANT INDUSTRY

In fulfilling the many responsibilities of the varied programs which come under the Plant Industry Division, the division conducts cooperative programs by means of memorandum of understanding agreements with many different departments of the U.S. Department of Agriculture, U.S. Department of Interior, as well as formal and informal programs with state, county, city and other governmental agencies.

Division programs and regulatory responsibilities are:

Agricultural Produce Buyer Licensing—The licensing and bonding of persons engaged in the business of buying agricultural produce from the producer.

Antifreeze Registration and Inspection—The registration, inspection and testing of antifreeze products before being offered for sale.

Apiary Registration and Disease Control—The registration and inspection of bees, including quarantine and disease control.

NOTE: **Dairy Products**—

The administration of laws and regulations concerning dairy products comes under the responsibility of the Nevada Dairy Commission pursuant to Chapter 584, NRS. This would include dairy products and substitutes such as frozen desserts, butter, oleomargarine, margarine, substitute dairy products, milk and cream.

Entomology—The survey and detection programs for insect pests in cooperation with other agencies, federal or state, having public responsibilities in the control of insect pests. It is the State Clearing House on insect conditions and identification.

Feed, Commercial Livestock, Inspection—Conformance in labeling, sampling and analysis of commercial livestock feeds sold in Nevada. No registration required.

Fertilizer and Agricultural Minerals—The registration, inspection and testing of commercial fertilizers and agricultural minerals for compliance with label requirements and guaranteed analysis of ingredients.

Nursery Licensing and Inspection—The licensing of nursery sales establishments and the inspection of nursery stock for pest condition, viability and grade labeling.

Pest Control Operator Licensing and Inspection—The examination, licensing and inspection of commercial pest control operators.

Pesticide Registration and Inspection—The registration, inspection and testing of pesticides for compliance with label requirements as to the directions for use, caution or warning statements, ingredient statements and the examination for compliance with guaranteed ingredients.

Pesticide Applicator Certification—The examination and certification of persons authorized to use restricted-use pesticides in the State.

Petroleum Product Advertising—The surveillance of advertising to prevent unfair competition in the sale of motor vehicle fuels and to protect the consuming public against fraudulent advertising.

Petroleum Product Inspection—The sampling of gasoline, diesel fuel, heating oil and motor oils for laboratory analysis to determine if they meet required quality standards.

Plant Pathology—The survey and detection for plant disease pests and control programs in cooperation with other agencies having public responsibilities.

Plant Quarantine—To promulgate and enforce both inter and intra state quarantines to protect against the introduction or spread of serious plant pests.

Seed—The inspection of seed stocks for compliance with legal requirements; the operation of a state seed laboratory for the testing of seed stocks and the promulgation and operations of the state seed certification programs.

Standardization and Grading Agricultural Produce—The inspection of shell eggs offered for sale for compliance of grade and labeling requirements; the market inspections and complaints investigated for determining adjustments with the various suppliers of produce for produce received that fail to meet factors; the Shipping Point Inspection Program wherein the division performs a third party inspection to provide for certification as to quality and condition at point of origin. Two types of inspection services are offered: fresh pack and processing grade.

Weeds, Noxious—Survey and detection programs for noxious weed pests and control programs in cooperation with other agencies including federal, state, county, city, school districts and individuals for the control of noxious weeds and enforcement of weed control laws.

Weighmaster, Public—The licensing, testing, inspection and bonding of public weighmasters.

Weights and Measures—Consisting of device inspection and testing, registration of repairmen, maintenance of state standards, metrology certification of accuracy, container content (net weight) and labeling, standards for sale of commodities.

Vertebrate Pest Control—The survey and control of vertebrate pests other than predatory animals.

Executive Director's Comments—

I hope the information presented here about agriculture in Nevada will be both informative and helpful.

If we take a look at our past, we can better understand our present and better estimate the future. True man, evolved as we know him, has only been on earth about 1.3 million years. Archaeological records show that man existed for over 99 percent of that time as a hunter, forager, fisherman and scavenger. Only for the last 10,000 years has he been a farmer. Man has produced plants and livestock for food and clothing only about .8 percent of the time he has been on earth. Agriculture began with the domestication of sheep in Iraq about 11,000 years ago and with the cultivation of wheat and barley in the fertile crescent of Iran, Iraq, Syria and the Nile Valley of Egypt about 10,000 years ago. Corn was first cultivated in Mexico about 8,000 years ago at about the same time that farming was beginning to replace hunting as a way of life in Europe.

The first crude wooden plow was invented in the Near East about 5,000 years ago. The widely used staple, potatoes, was first cultivated in Peru 5,500 years ago; and rice in Asia only about 4,000 years ago. The horse has been a servant of man only about 4,000 years, less than half as long as sheep and about half as long as cattle.

Modern agriculture, as we know it, with machinery, fertilizers, pesticides and scientifically improved varieties of crops and improved breeds of livestock, has only existed a short period of time, around a hundred years or less. Modern agriculture viewed in this perspective is brand new. We are only on the threshold of agricultural advancement.

What about the future? Will agricultural advancement be stymied by environmental concerns? Will all uses of chemicals and pesticides in this country eventually be stopped? Will the use of land for housing and industrial development reduce our food producing capability below our needs? Only time will tell.

It is my belief that our food producing capacity will continue to advance faster than our need for food, far into the future. In the long-range future, arid parts of the world, similar to Nevada's desert areas, will be in irrigated agriculture, watered with desalted sea water. Three dimensional farming with artificial heat and light, as presently practiced in some greenhouses, will become widespread. Monstrous machines will manufacture soil from rock, gravel and other ingredients. As the need for food is stimulated by population growth, agricultural producers will adjust to meet the increased demands.

It's exciting to be a part of the beginning of modern agriculture.

THOMAS W. BALLOW