

their owners neared the completion of their project, four new candidates had already been chosen to receive reindeer steers to raise for the 2010 Tanana Valley State Fair. The new students received four new calves selected for distribution: J.R., Zesty, Arnold, and Bo left the Reindeer Research Program herd at the Agricultural and Forestry Experiment Station to join their new owners.

The program gained national attention, and has served as inspiration and a model for a similar project in Kalamazoo, Michigan. Carol Borton, project leader for the 4-H club Tundra Busters and a livestock superintendent, provides 4-Hers with the opportunity to learn and practice reindeer husbandry. The program accepted fourteen students in its first year, having to turn away twenty more due to resource limitations. The main focus of the program is a showmanship competition at the end of the summer for the fair. Preparation for this event meant that the children worked intensively with the deer assigned to them. They help handle, halter break, and feed the reindeer. Next summer Borton would like to bring the 4-Hers to Alaska to see a reindeer handling on the Seward Peninsula and visit the Reindeer Research Program at the University of Alaska Fairbanks so they can experience the reindeer industry at first hand.

Modifications to the pilot project in Alaska were made to address some of the handling issues from the previous year. The calves would start training at younger ages. Halters were put on the reindeer at about two months of age and animals were handled weekly. The animals were also released to the candidates in mid-August rather than mid-September. Classes were modified slightly to emphasize subjects that would be relevant to the new crew of students and animals. Once again a variety of other livestock, including goats and horses, would be part of their new everyday existence until that August day in 2010 when both reindeer and owners loaded up and headed for the Tanana Valley State Fair to again be part of the livestock market project.

SECURITY OF THE RED MEAT SUPPLY IN ALASKA

Thomas F. Paragi, S. Craig Gerlach, and Alison M. Meadow

Food security is a key issue for Alaskans. We live at the end of a long food chain where most of our food is industrially produced and packaged, imported into the state, and then transported by air, truck, and/or barge to urban and rural communities. Most people are aware that the average piece of food travels 1,500 miles from producer to consumer in the US, but we calculated distances from 1,600 to 2,500 miles for vegetables coming to Anchorage or Fairbanks, with most suppliers far outside the state. You can increase these distances for food going to outlying communities. In-state commercial storage is almost nonexistent. Alaskans are vulnerable and food insecure because of the potential for disruptions in supply and the fact that our food system is controlled by big producers outside the state, the “big box stores” inside the state, and little local production.

Food prices in our remote state depend on a combination of transportation costs and relatively little competition between food retailers. Up to 12 percent of food cost in the US is due to transportation—this percentage will necessarily be higher given our longer food chain and high fuel cost in remote areas. Five supermarket chains account for 40 percent of food retail sales in the US. Of the nine supermarkets in Fairbanks, seven stores are owned by three of the top US supermarket chains. In 1977 it was estimated that 95 percent of food in Alaska is imported, despite our seemingly large number of avid gardeners, hunters, and fishers. This figure has been used by many sources

since then but research to verify it only began recently.

Alaskans eat a variety of animal protein, including domestic livestock and wild game and fish. To understand how much red meat we import, in the summer of 2008 we assembled data from 2001-2006 about the relative proportions of red meat that are imported, that are produced within state, and that are harvested wild from the countryside. We attempted to capture the main components common to both urban and rural Alaska. Our individual research specialties focus on production of game meat from wild systems and factors that affect vulnerability of supply and nutritional quality in food systems of urban and rural Alaska. Moose, caribou, and deer composed 91 percent of game harvest by boned-out carcass weight. We did not estimate harvest of marine mammals by Alaska Natives, production of red meat for home use, or the domestic production or wild harvest of fowl. Although these latter sources may be important in some areas or for particular families, particularly the wild species in rural Alaska communities where the country food harvest is associated with culture, identity, and tradition, overall we believe they are presently minor components of total animal protein consumed statewide, excluding fish.

We found that an annual average of 85 percent of red meat from hoofed animals in Alaska was imported from outside sources during 2001-2006 (figure below). Rising fuel costs and increasing demand as a result of human population growth warrant

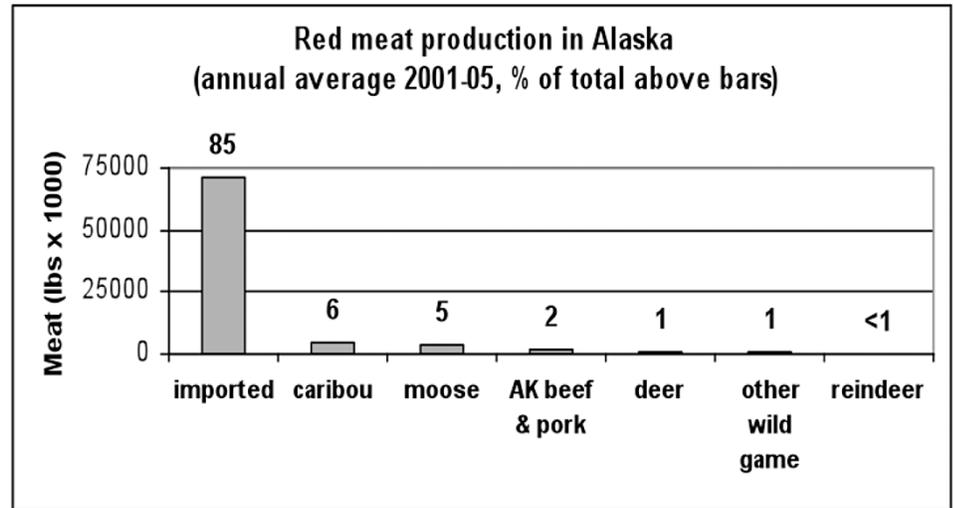
consideration of how and where red meat will be produced and distributed in Alaska, now and in the future.

Many climate scientists forecast a warmer and drier scenario in the Interior with more frequent wildland fires. Such conditions will likely shift forest composition from spruce toward deciduous trees, or may even produce a biome shift from forest to a grassland savanna with scattered trees. In the long term, potential for livestock production in Alaska, especially in the Interior's boreal forest zone, may improve if adequate precipitation allows for local forage and grain production.

Wood bison indigenous to the boreal forest in North America were recently imported from Canada and are part of a restoration and conservation effort to reestablish a wild grazing system. At present the animals are in confinement following a disease quarantine (now completed) and pending decisions over when and where they will be released into the wild. It may be at least a decade after a reintroduction before small numbers of wood bison may be harvested. Plains bison indigenous to the central grasslands of North America currently exist as wild herds in parts of Alaska (primarily near Delta Junction and McGrath) and as domestic livestock on private lands (primarily near Delta Junction).

In the short term, commercial in-state livestock production might expand to serve local markets (especially on the road system) to reduce reliance on imported red meat. Ranching of elk and plains bison at low density may hold promise because of broader foraging ability (grazing and seasonal browsing), but fencing costs are a financial challenge. Some residents already raise goats and northern sheep breeds on predominantly native forage (including shrubs, such as willow) for home use, and this may also increase.

Wild game production occurs mostly on public lands and uses solar energy—meaning that game animals feed on plants that use the sun as energy. Unlike most agricultural crops,



wild forage does not require other energy inputs, such as fossil fuel. Moose habitat in the boreal forest generally benefits from fire disturbance or logging if willows or deciduous trees regenerate. However, game production is less reliable than livestock—animals are often dispersed relative to settlements, and there is limited control over production factors. Some production factors for wild ungulates on public lands can be value-laden, resulting in controversy; examples include harvest of females and calves, predator control to increase the survival of calves, and prescribed burns to improve browse production. Nearly one of every three moose currently harvested in Alaska comes from the Interior near population centers around Fairbanks and Delta Junction.

We expect it will remain difficult to engage the rural and urban public or government in serious discussions about agricultural policy until the price of food becomes a substantially larger (even prohibitive) proportion of annual income for Alaskans, or until major disruptions in transportation increase the frequency and magnitude of local and regional food shortages. More public discussions are being held on protection of lands suitable for food production, exploring means such as new zoning models, in response to population increase and potential loss of productive agricultural land because of residential or industrial development near urban centers.

Thomas F. Paragi is a wildlife biologist with the Alaska Department of Fish and Game in Fairbanks (tom.paragi@alaska.gov, 459-7327)

S. Craig Gerlach is a professor in the Center for Cross Cultural Studies and in the Alaska Climate Center for Assessment and Policy, University of Alaska Fairbanks (sgerlach@alaska.edu, 474-6752)

Alison M. Meadow received her doctorate at UAF and is now affiliated with the Department of Soil, Water, and Environmental Science at The University of Arizona in Tucson (meadow@email.arizona.edu)

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Data sources:

Imported red meat (includes veal and lamb): courtesy of Jerardo Alberto, US Department of Agriculture, Washington, DC (calculations by Dr. Jennifer Schmidt, UAF)

Wild game harvest: Alaska Department of Fish and Game www.wildlifeneews.alaska.gov/pubs/techpubs/mgt_rpts/harvest_summary.pdf

Alaska beef and pork production: Alaska Department of Natural Resources, Division of Agriculture

Alaska reindeer: US Department of Agriculture www.nass.usda.gov/Statistics_by_State/Alaska/Publications/Annual_Statistical_Bulletin/2006/akmilk06.pdf

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ALASKA'S FOOD (IN)SECURITY
CLIMATE CHANGE AND THE BOREAL FOREST
BIOMASS AND HYDROCARBONS

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