



Economic Impact Assessment of Veterinary Medicine in BC

Prepared for the BC Cattlemen's Association

Final Report

March 2023

MNP LLP

Suite 2200 MNP Tower, 1021 West Hastings Street, Vancouver B.C., V6E 0C3

1.877.688.8408 T: 604.685.8408 F: 604.685.8594

Acknowledgements

MNP would like to thank the individuals and organizations who generously shared their time and materials for this study.

Funding partners:



Other funding partners for this study:

- Fort Fraser Livestock Association
- Mud River/Beaverly Farmers' Institute
- Sinkut Mountain Livestock Association

Contents

Executive Summary	2
1. Introduction	5
2. Study Approach.....	7
3. Economic Impact of Veterinary Services in BC.....	9
4. The Role of Veterinarians in BC’s Livestock Sector	15
5. Case Study	23
Appendices	29

Executive Summary

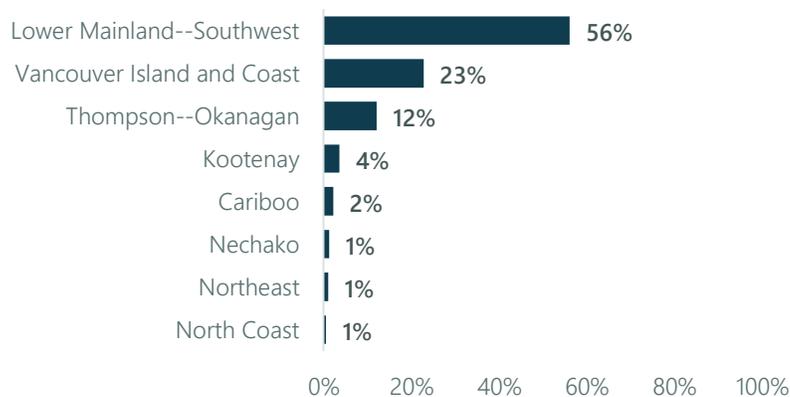
Introduction

The BC Cattlemen’s Association (“BCCA”) and partners engaged MNP LLP (“MNP”) to undertake a study of the economic impact of veterinary medicine in BC to demonstrate how the absence of veterinary services affects the economy of BC. The study included developing estimates of the economic contributions of the veterinary sector and the livestock sector, as well as developing a case study to illustrate the impacts of access to veterinary care on the livestock sector in rural communities.

Key Findings

- The majority of veterinary practices are located in the Lower Mainland – Southwest and Vancouver Island and Coast regions.

Distribution of Veterinary Practices by Region



Source: Statistics Canada, Custom Tabulation of Business Register Data, Number of Businesses by Census Divisions- 2019

- A 2019 labour market study found that there is a shortage of veterinarians in BC. The shortage is most significant for large animal veterinarians and in rural areas.
- In 2022 there were 629 accredited veterinary practice facilities in BC and approximately 1,800 veterinarians working in private practice. Of these, between 250 and 300 veterinarians provide care for large animals.
- In 2021, the ratio of large animals to veterinarians working in large or mixed animal practices in BC was between 3,000 and 3,500 animals per veterinarian. In parts of the interior and northern BC that ratio is between 7,700 and 8,900 animals per veterinarian.
- Services for small animals are a key factor in maintaining the financial viability of a veterinary practice. As a result, most practices providing services to large animals, also provide services to small animals.
- Increases in the number of companion animals during COVID have increased the workload of veterinarians.

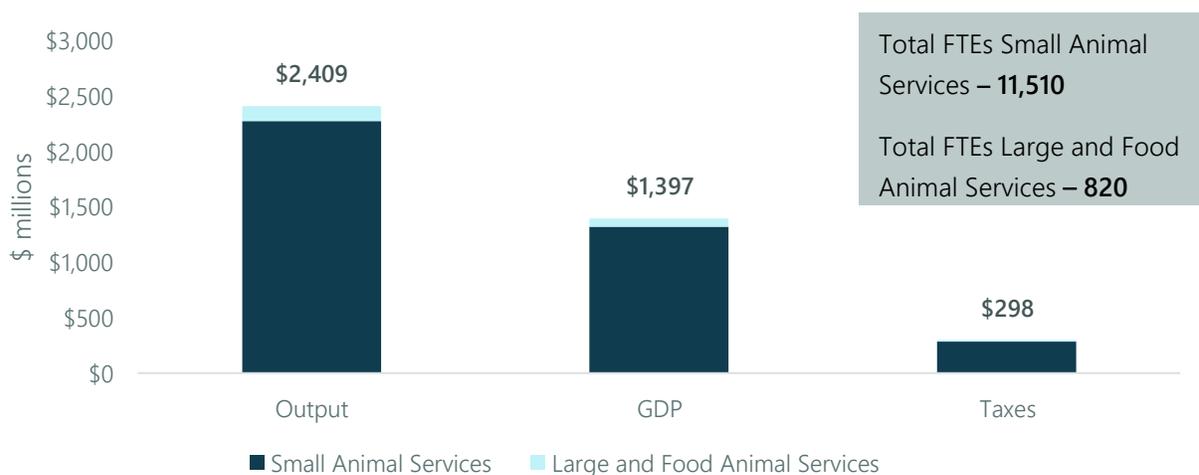
Economic Impacts of the Veterinary Sector

The economic impacts generated by veterinarians in BC are shown in Figure A. In 2021, veterinary practices in BC generated the following economic impacts:

- \$2.4 billion in total output, including direct output of \$1.5 billion and indirect and induced output of \$0.9 billion.
- \$1.4 billion in GDP, including direct GDP of \$0.9 billion and indirect and induced GDP of \$0.5 billion.
- 12,330 total full-time equivalent (FTE) jobs in BC, including direct employment of 8,650 FTEs and indirect and induced employment of 3,680 FTEs.
- Approximately \$298 million in total government tax revenues, including \$142 million in direct tax revenues and \$156 million in indirect and induced tax revenues.

More than 90 percent of the impacts were estimated to be generated by small animal services.

Figure A: Economic Impacts of Veterinary Practices in BC - 2021



Linkages to the Livestock Sector

BC’s livestock sector contributes approximately \$1.5 billion of GDP to BC’s economy annually and supports over 20,000 full-time equivalent jobs. Veterinarians play a critical role in ensuring the sustainability and viability of the sector. They provide medical and surgical services to livestock as well as consultation on disease prevention and treatment. They also support food security and safety through veterinary oversight of agricultural operations.

Financial Impact of Lack of Access to Veterinary Services

Lack of access to veterinary services results in increased loss of animals and hinders the ability of livestock producers to expand operations, both of which can impact the viability of operations. For example, when a beef cow is lost the rancher is out-of-pocket the production expenses of raising the cow. The sale of between three and five cows was estimated to be required to recoup those costs. This also means that there is less revenue to cover fixed costs which impacts the viability of the operation.

Potential Impact of Increased Veterinary Care

Increases in the number of mixed animal veterinarians would create incremental economic impacts through the associated practice expenses. In addition, increased access to veterinary care could allow livestock producers to increase their production.

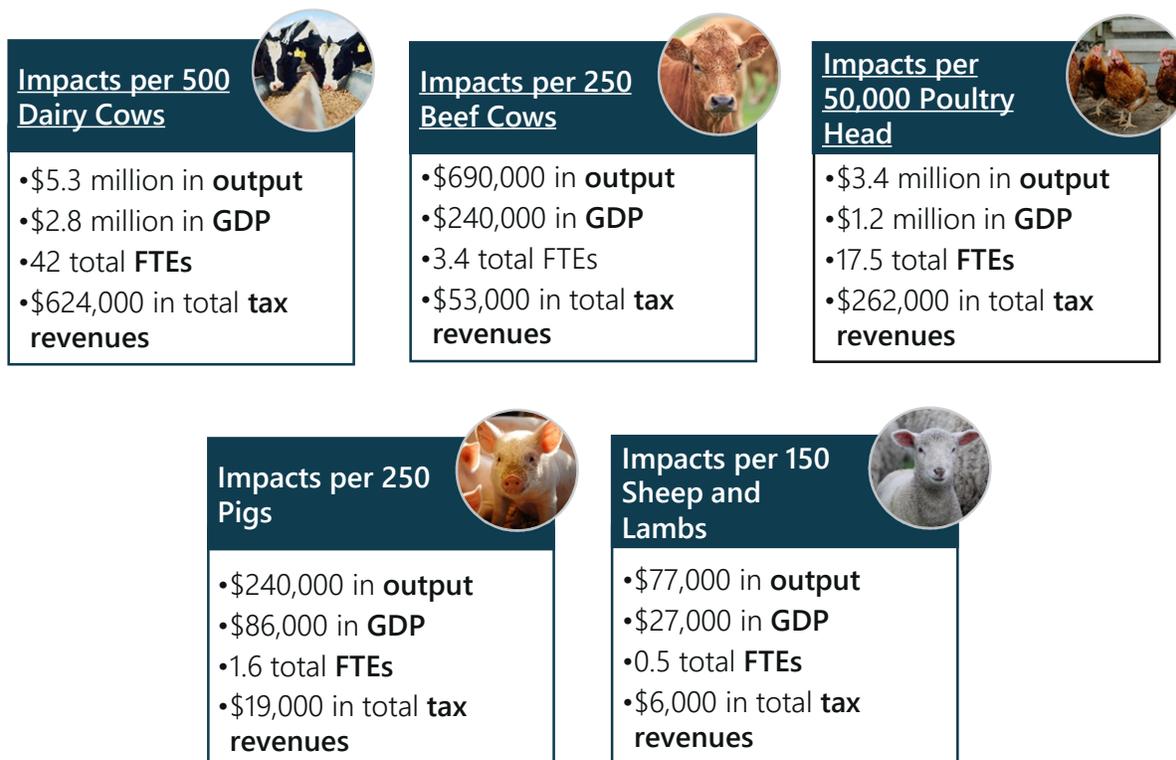
Table A shows the estimated impact per full-time veterinarian in a mixed animal practice.

Table A: Economic Impacts per Full-Time Veterinarian in a Mixed Animal Practice

	Output (\$)	GDP (\$)	Employment (FTEs)	Federal Taxes (\$)	Provincial Taxes (\$)	Municipal Taxes (\$)
Direct	\$599,900	\$325,700	4.2	\$33,700	\$20,700	
Indirect and Induced	\$316,400	\$184,300	1.3	\$22,200	\$24,100	\$6,100
Total	\$916,300	\$510,000	5.5	\$55,900	\$44,800	\$6,100

Figure B illustrates the potential magnitudes of the impact to the economy of producers growing their operations by livestock type.

Figure B: Total Direct, Indirect and Induced Economic Impacts by Animal



1. Introduction

Background

Livestock production is an important component of the BC economy. Access to adequate veterinary services is crucial for ranchers and livestock producers and the viability of their operations. Veterinarians provide medical care to livestock animals. BC currently faces a shortage of veterinarians across most regions and types of practices. The shortage however is more acute for those providing services to large animals.

The BC Cattlemen's Association ("BCCA") and its funding partners engaged MNP LLP ("MNP") to undertake a study of the economic impacts of veterinary medicine in BC to demonstrate how the absence of veterinary services affects the economy of BC and individual communities. The scope of the study included:

- Estimating economic impacts of veterinary practices in BC.
- Developing a profile of the livestock sector in BC and its economic footprint.
- Estimating economic impacts by type of animal.
- Developing a case study to illustrate the direct and indirect impacts to the livestock sector related to access to veterinary care.

Approach

In preparing this report, MNP carried out the following activities:

- Gathered and analyzed data from BCCA, the Society of BC Veterinarians (SBCV) and publicly available data sources such as Statistics Canada.
- Developed a high-level profile of veterinary sector in BC.
- Developed a high-level profile of the livestock sector in BC.
- Estimated the economic impacts of veterinary practices in BC following an input-output methodology using provincial multipliers published by Statistics Canada.
- Estimated the economic impacts of livestock operations by type of livestock operation in BC following an input-output methodology using provincial multipliers published by Statistics Canada.
- Conducted interviews with representatives of the livestock sectors to inform the case study and fill gaps in available information.
- Administered a survey to select livestock producers and veterinary service providers to collect information related to access to veterinary care in regions across BC.
- Developed a case study on costs to the livestock sector and economic impacts forgone as a result of not being able to access veterinary care.
- Developed a report of the findings of our analysis.

Report Structure

The remaining sections of this report are organized as follows:

- Section 2 provides an overview of the economic impacts methodology and data sources used in the study.
- Section 3 provides an overview of the veterinary sector and presents a summary of the economic impacts created by the veterinary sector in BC
- Section 4 provides an overview of the livestock sector and presents a summary of the economic impacts created by the livestock sector in BC, as well as impacts of access to veterinary care.
- Section 5 presents a case study illustrating the impacts to the livestock sector related to access to veterinary care
- The appendices provide additional detail on the economic impact methodology and relevant assumptions and background information about MNP.

Report Limitations

This report is not intended for general circulation, nor is it to be published in whole or in part without the prior written consent of MNP. The report is provided for information purposes and is intended for general guidance only. It should not be regarded as comprehensive or a substitute for personalized, investment or business advice.

We have relied upon the completeness, accuracy and fair presentation of all information and data obtained from BCCA, SBCV, interviews with key informants and public sources, believed to be reliable. The accuracy and reliability of the findings and opinions expressed in the presentation are conditional upon the completeness, accuracy and fair presentation of the information underlying them. As a result, we caution readers not to rely upon any findings or opinions for business or investment purposes and disclaim any liability to any party who relies upon them as such.

The findings and opinions expressed in the presentation constitute judgments as of the date of the presentation and are subject to change without notice. MNP is under no obligation to advise of any change brought to its attention which would alter those findings or opinions.

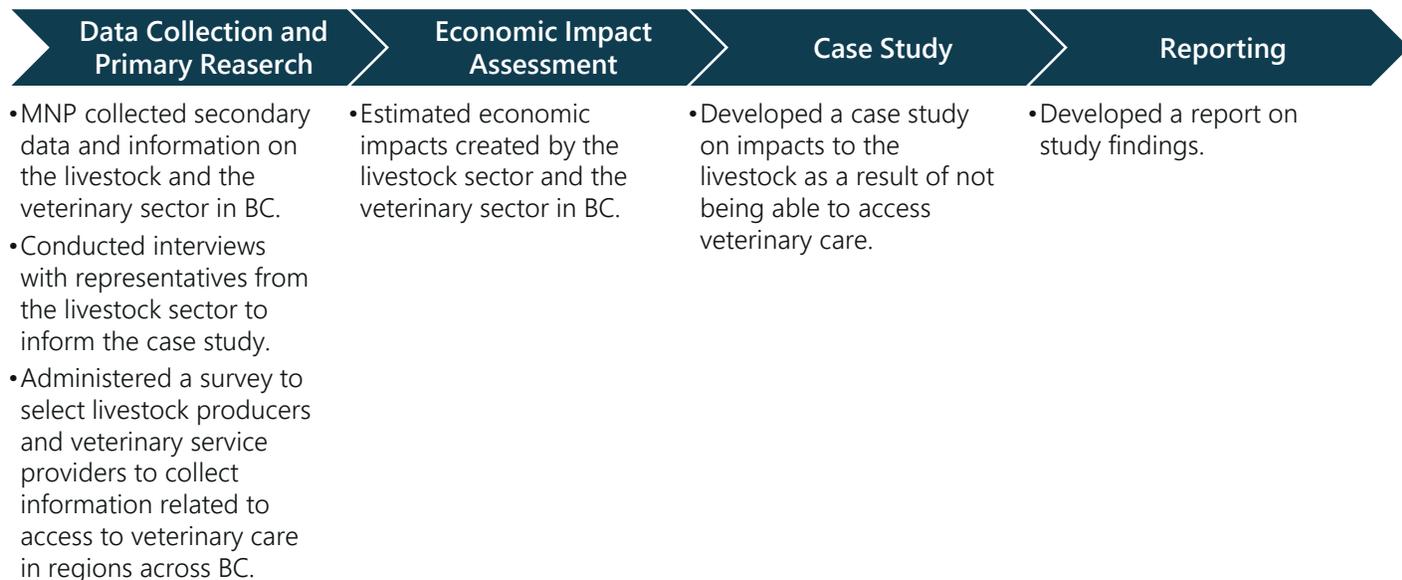
The analysis contained in this report is based upon projections, founded on past events giving an expectation of certain future events. Future events are not guaranteed to follow past patterns and results may vary, even significantly. Accordingly, we express no assurance as to whether projections underlying the economic and financial analysis will be achieved.

2. Study Approach

Study Approach

MNP’s overall study approach is outlined in Figure 1.

Figure 1: Study Approach



Economic Impact Methodology

In general, economic impacts are viewed as being restricted to quantitative, well-established measures of economic activity. The most commonly used of these measures are output, GDP, employment and government revenue:

- **Output** is the total gross value of goods and services produced by a given company or industry measured by the price paid to the producer. This is the broadest measure of economic activity.
- **Gross Domestic Product (“GDP”)**, or value added, refers to the additional value of a good or service over the cost of inputs used to produce it from the previous stage of production. Thus, GDP is equal to the unduplicated value of the goods and services produced.
- **Employment** is the number of additional jobs created. Employment is measured in terms of full-time equivalents (“FTEs”). One FTE is equivalent to one person working full-time for one year or one person-year of employment.
- **Government Revenues** are the total amount of revenues generated for different levels of government. Revenues arise from personal income taxes, indirect taxes less subsidies, corporate income taxes, taxes on products and royalties. Please note that because tax revenues can frequently change due to modifications in tax policy, the government revenues in this report are estimates only and subject to change. They should be viewed as approximate in nature.

Economic impacts may be estimated at the direct, indirect and induced levels:

- **Direct impacts** are due to changes that occur in “front-end” businesses that would initially receive expenditures and operating revenue as a direct consequence of the operations and activities of an industry, organization or project.
- **Indirect impacts** arise from changes in activity for suppliers of the “front-end” businesses.
- **Induced impacts** arise from shifts in spending on goods and services as a consequence of changes to the payroll of the directly and indirectly affected businesses.

To estimate the economic impacts, MNP employed an input-output methodology using provincial economic multipliers for BC published by Statistics Canada. Input-output modeling is a widely-used and widely-accepted approach, making it recognizable by many different stakeholders and audiences. The structure of the approach also facilitates easy comparisons between reported results for different industries and organizations.

A detailed description of our economic impact methodology and assumptions are provided in Appendix A.

Data Sources

Data for the estimating the economic impacts of veterinary practices were obtained from:

- Canadian Veterinary Medical Association’s (CVMA) economic survey of veterinary practices
- College of Veterinarians of BC (CVBC) 2021/22 annual report.
- CVMA’s Labour Market Study, Society of BC Veterinarians (SBCV) Chapter.

Data for estimating the economic impacts of the livestock sector were obtained from:

- Statistics Canada’s Farm Cash Receipts data.
- Output by industry from Statistics Canada’s Input-Output tables for 2019.



3. Economic Impact of Veterinary Services in BC

Overview of the Veterinary Sector

Veterinarians provide medical and surgical services to companion animals, food animals and exotic animals and are also involved in research, education and inspection activities related to animal and human welfare. The types of services provided by veterinarians are summarized below.

Types of Veterinary Services

Companion or Small Animals



Small animal practices treat dogs and cats and, in some cases, exotic species such as birds, aquarium fish, reptiles and small mammals. They provide medical services as well as vaccination services to prevent the spread of diseases and may also carry out dental and surgical procedures. Other services that may be provided are nutrition and behaviour counselling and reproduction management.

Food Animal



Food animal practitioners provide health care services for agricultural livestock including sheep, cattle, goats, swine, poultry and fish. Medical services can include diagnosis and treatment of individual animals, and diagnosis, treatment, and preventive measures for livestock. Other services may also provide consultation on disease prevention, biosecurity, nutrition, and reproduction.

Equine



Equine veterinarians provide health care to individual horses and herd health management. Equine veterinarians support exhibitions, cultural and competitive events such as horse racing, rodeos, show jumping and horse shows. Veterinarians are also essential in certification of the health of horses for export.

Specialized Disciplines



These are veterinarians with advanced training and provide specialized services in many clinical disciplines including surgery, internal medicine, medical imaging, anesthesiology, ophthalmology, veterinary pathology, dentistry, wildlife medicine and oncology. Specialty practices may also focus on particular species such as swine specialists, avian, zoo or exotics.

Industry



Veterinarians take part in the research and commercial development of new feed products, drugs and technologies with animal health companies.



Research and Academia

These veterinarians are involved in teaching and studying animal health at veterinary colleges, universities, research institutions and labs. They also contribute towards advancement in human medicine and collaborate with researchers around the world.

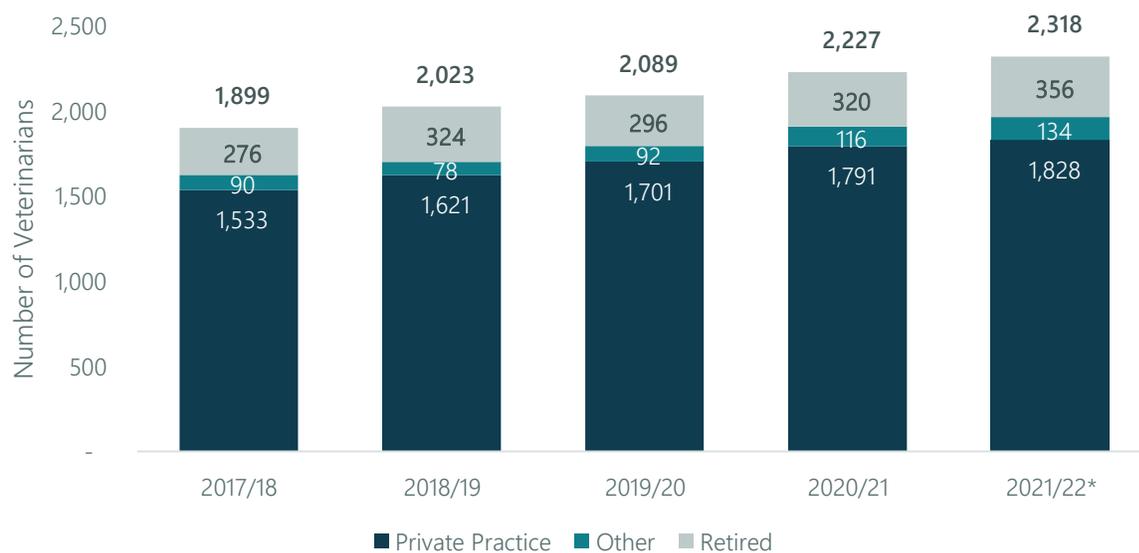


Government and Public Services

Provincial and federal veterinarians help to develop public policy and legislation related to animal and human health. They regulate the import and export of livestock and food products and are responsible for the control of infectious diseases among livestock and wildlife. They also provide diagnostic/inspection services and ensure the health and safety of commercial food products

According to the College of Veterinarians of BC (“CVBC”), there were approximately 2,300 registered veterinarians in BC in 2021/22 out of which 1,800 were actively practicing in private practices, 130 were in public sector and specialty practices and about 350 were retired. As shown in Figure C, between 2017/18 and 2021/22 the number of actively practicing veterinarians in private practices in BC grew by about 295 veterinarians (approximately 4 percent annually).

Figure C: Number of Actively Practicing Veterinarians and Total CVBC Registrants – 2017 to 2022

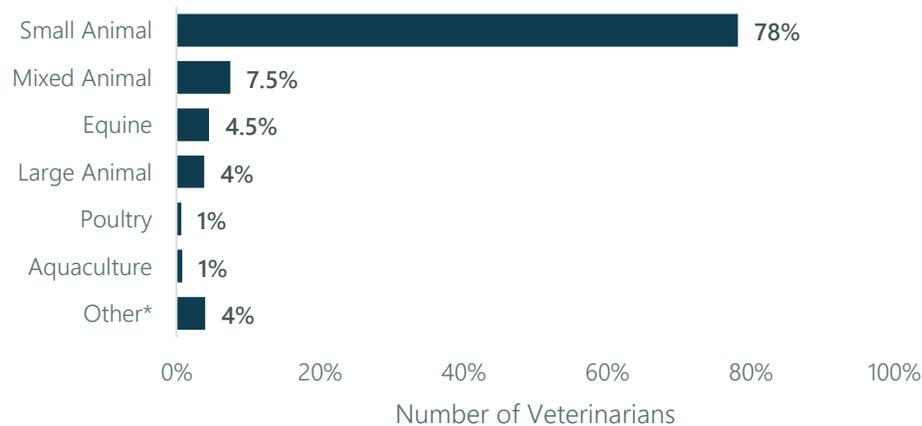


Source: CVBC, Annual Report – 2017 to 2022

*Private Practice includes Provisional Supervised Active (PSA) Registrations. In September 2021, the CVBC introduced Provisional Supervised registration as a subcategory of the Private Practice class. It is available to veterinarians who do not yet have a Certificate of Qualification. PSA registration enables these veterinarians to work under supervision of a CVBC veterinarian while they prepare for and complete the Pre-Surgical Assessment and Clinical Proficiency Exam.

The majority of veterinarians (more than 75 percent) work in small animal practices, approximately 16 percent work in mixed, equine and large animal practices, 2 percent in poultry and aquaculture practices and the remainder (about 3 percent to 4 percent) work in other settings. Figure D shows the distribution of veterinarians by type of practice.

Figure D: Number of Veterinarians by Type of Practice



Note: Other includes veterinarians working in educational/research, government, exotic/wildlife, laboratories, and regulatory fields.

Source: CVBC, 2021/22 Annual Report; CVMA – SBCV, Labour Market Study Final Report – 2019

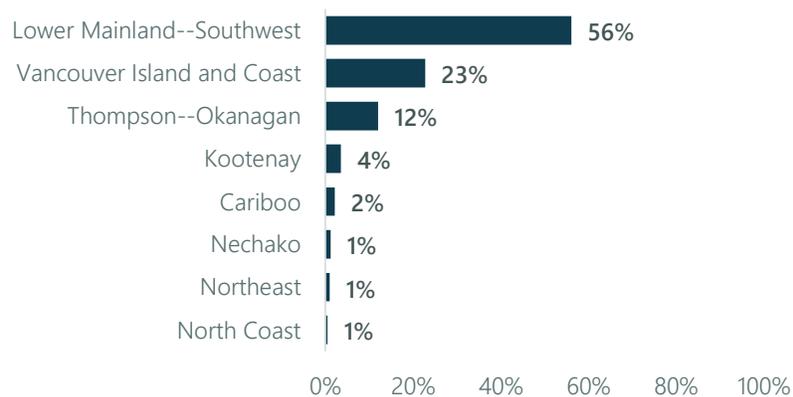
Small Animal Services Account for the Majority of the Revenues Generated by Veterinary Practices

Veterinary practices were estimated to have generated approximately \$1.5 billion in revenues in BC in 2021. Small animal practices accounted for 85 percent (\$1.3 billion) of the revenues and mixed and large animal practices accounted for 15 percent (\$200 million). It was further estimated that within mixed and large animal practices, revenues from small animal services accounted for 60 percent whereas food animal and equine services accounted for 40 percent of the revenues.

In 2022 there were 629 accredited practice facilities in BC.¹ As shown in Figure E, the majority of practices are in the Lower Mainland–Southwest region (56 percent), followed by the Vancouver Island–Coast region (23 percent) and Thompson Okanagan region (12 percent). All other regions accounted for the remaining nine percent of practices.

¹ CVBC Annual Report 2022.

Figure E: Distribution of Veterinary Practices by Region



Source: Statistics Canada, Custom Tabulation of Business Register Data, Number of Businesses by Census Divisions- 2019

Economic Impacts of Veterinary Practices in BC

The day-to-day operations of veterinary practices generate economic impacts in BC through expenditures on goods and services, the employment of staff, and the generation of tax revenues for different levels of government.

To estimate the economic impacts of veterinary practices we used the estimated revenues per full-time veterinarian from the 2021 CVMA economic survey.² In 2021, veterinary practices in BC were estimated to have revenues of approximately \$1.5 billion.

As shown in Table 1, veterinary practices in BC in 2021 generated the following economic impacts:

- \$2.4 billion in total output, including direct output of \$1.5 billion and indirect and induced output of \$0.9 billion.
- \$1.4 billion in GDP, including direct GDP of \$0.9 billion and indirect and induced GDP of \$0.5 billion.
- 12,330 total full-time equivalent (FTE) jobs in BC, including direct employment of 8,650 FTEs and indirect and induced employment of 3,680 FTEs.
- Approximately \$298 million in total government tax revenues, including \$142 million in direct tax revenues and \$156 million in indirect and induced tax revenues.

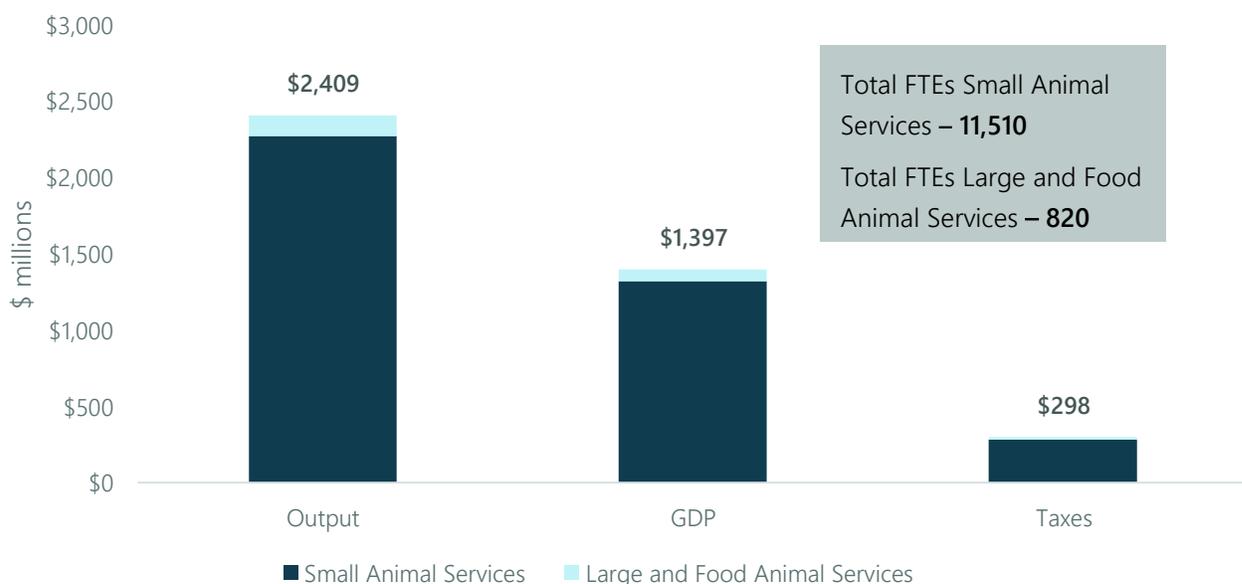
² Veterinary practices were estimated to generate between \$530,000 to \$670,000 in revenues per full-time equivalent (FTE) veterinarian and had expenditures (including compensation of associate veterinarians) between \$400,000 to \$580,000 per FTE veterinarian in 2021 depending on the type of practice. CVMA's economic surveys define a Full-Time Equivalent (FTE) veterinarian as a veterinarian working 1,750 hours annually. Practice wide estimates of revenues and expenditures were developed using total number of veterinarians and average annual hours worked.

Table 1: Economic Impacts of Veterinary Practices in BC - 2021

	Output (\$ million)	GDP (\$ million)	Employment (FTEs)	Federal Taxes (\$ million)	Provincial Taxes (\$ millions)	Municipal Taxes (\$ millions)
Direct	\$1,510	\$861	8,650 ³	\$89	\$53	\$0
Indirect and Induced	\$899	\$536	3,680	\$64	\$72	\$20
Total	\$2,409	\$1,397	12,330	\$153	\$125	\$20

Figure F provides a breakdown of the impacts by type of service. More than 90 percent of the impacts were estimated to be generated by small animal services. According to livestock producers and veterinarians interviewed for this study, the provision of services to livestock tends to be seasonal. As a result, most veterinarians providing livestock services, also provide small animal services.

Figure F: Share of Economic Impacts Generated by type of Service



Comparison with Other Industries

To provide perspective on the size of the economic impacts of veterinary medicine in BC, it is useful to compare the impacts with those created by other industries and sectors. One such comparison is new home construction. The direct and indirect employment supported by veterinary practices (10,480 FTEs)

³ Direct employment includes veterinarians and other practice staff. The number of veterinarians are based on registration data from CVBC’s Annual reports. The number of other practice staff were estimated based on a full-time veterinarian working 1,750 hours per year and the ratio of hours of support staff for each hour of a veterinarians time from the Canadian Veterinary Medical Association Economic Report for BC for 2021. The total hours of support staff time were converted to FTEs based on annual hours per FTE of 1,950.

is equivalent to the employment supported by construction of approximately 4,580 new homes.⁴ This is equivalent to roughly 10 percent of new homes constructed in BC in 2021.⁵

Mental Health Among Veterinarians

Overwork due to increasing demand is leading to burnout among veterinarians. The recent increase of pets due to COVID-19 along with the shortage of veterinarians is leading to an unsustainable amount of work hours for clinics. "The Canadian Veterinary Medical Association estimates that 30 per cent of Canadian veterinarians and 50 per cent of vet technicians are in the advanced stages of burnout." (Canada's veterinarians are not OK — overwork, pet owners, debt load leading to burnout, Lindsay Duncombe, 2022).

Source: <https://www.cbc.ca/news/canadian-veterinarians-burnout-1.6405125>

Increased workload is contributing to serious effects on the mental health and well-being of veterinarians. A 2020 study published in the Journal of the American Veterinary Medical Association (AVMA), found that one in five Canadian vets and technologists reported thinking about taking their own life. The study found "26.2 per cent of Canadian veterinarians have had thoughts of suicide in the last 12 months, significantly higher than the 12.2 per cent of Canadians reported to have seriously considered suicide in their lifetime."

Source: Perret, J. L., ET AL (2020) Prevalence of mental health outcomes among Canadian veterinarians. *Javma*, 256. (3). <https://doi.org/10.2460/javma.256.3.365>



⁴ Canadian Home Builders' Association, Economic Impacts of New Home Construction. Available here: <https://www.chba.ca/impacts>

⁵ In 2021 there were approximately 47,600 new homes constructed in BC that supported approximately 109,000 on-site and off-site jobs Source: Canadian Home Builders' Association, Economic Impacts of New Home Construction. Available here: <https://www.chba.ca/impacts>

4. The Role of Veterinarians in BC's Livestock Sector

Veterinarians are an integral part of livestock operations. They provide medical and surgical services to livestock as well as consultation on disease prevention and treatment, biosecurity, nutrition, and reproduction. Veterinarians play a critical role in ensuring sustainability and viability of the sector by maintaining animal health and welfare. They also support food security and safety through veterinary oversight of agricultural operations.

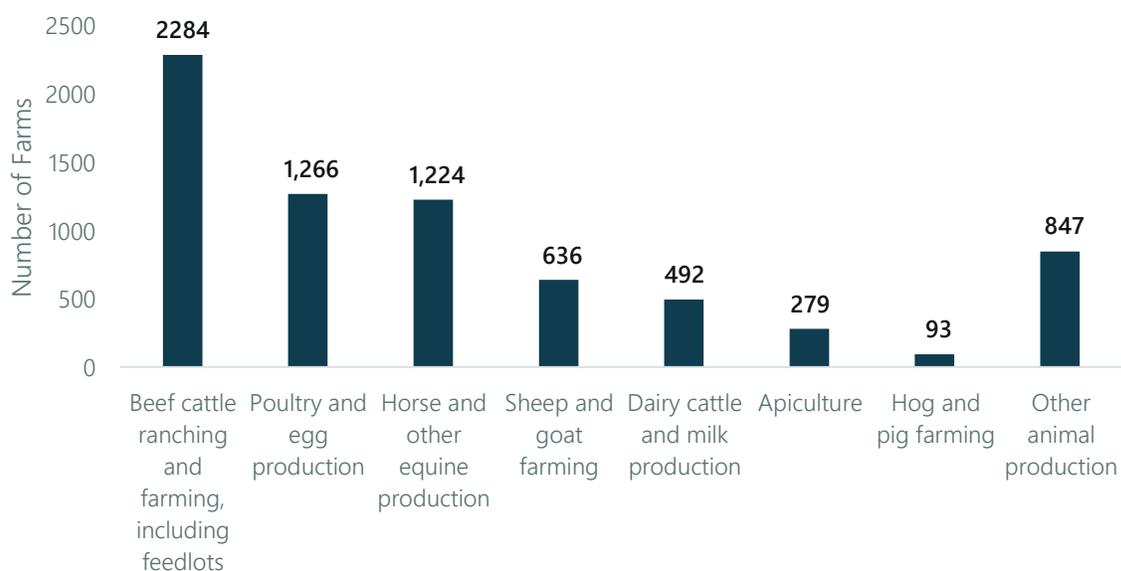


Overview of the Livestock Sector in BC

Number of Farms by Type

BC has a diverse livestock sector that includes beef, dairy, poultry, goat, hog and equine production. According to the 2021 Census of Agriculture, there are approximately 7,100 livestock farms in BC. Figure G shows the number of livestock farms in BC by type of farm. The sector is dominated by beef cattle operations which account for 32 percent of the farms. Poultry farms account for approximately 18 percent of the farms, followed by equine farms (17 percent), sheep and goat farms (9 percent), dairy cattle farms (7 percent), apiculture (4 percent), and hog and pig farms (1 percent). All other types of farms as well as combination farms account for approximately 12 percent of the livestock farms in BC.

Figure G: Number of Farms by Type

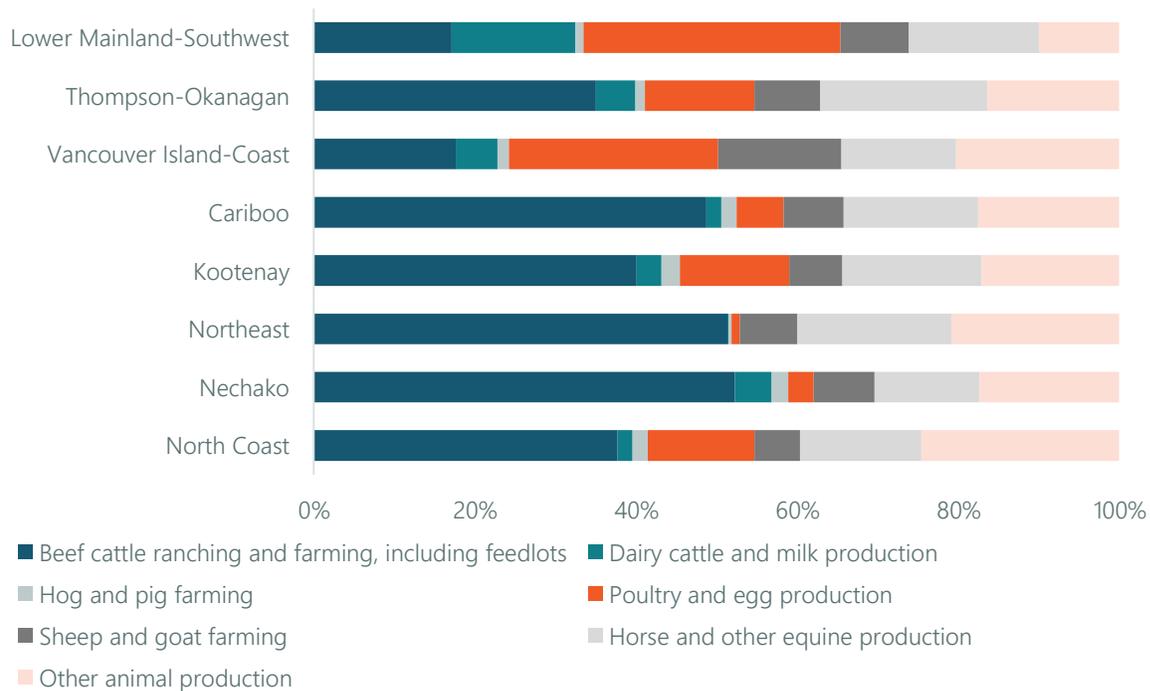


Source: Statistics Canada, Census of Agriculture 2021.



Figure H shows the distribution of livestock farms by region. As shown in the figure, livestock farming in the Lower Mainland-Southwest, Thompson Okanagan and Vancouver Island-Coast is relatively diverse and includes beef cattle, dairy cattle, poultry, sheep, pigs and equine farms. Livestock operations in the Cariboo, Kootenay and the Northern regions are predominately beef cattle but other types of farming are carried out as well.

Figure H: Distribution of Livestock Farms in BC by Type and Region – 2021



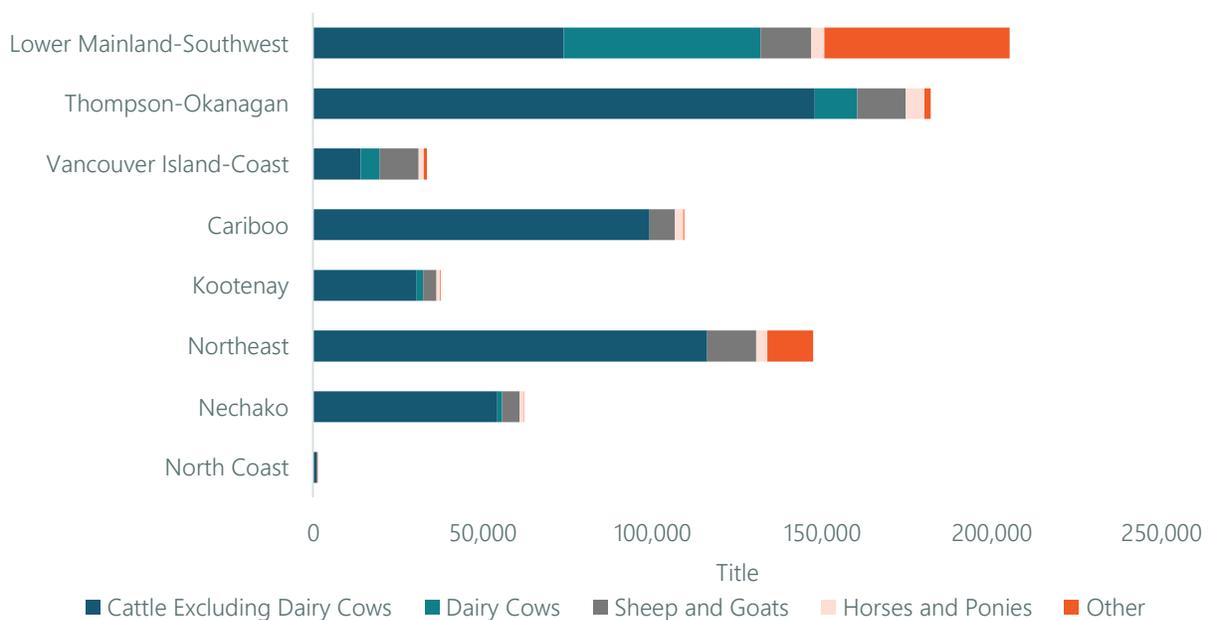
Source: Statistics Canada. Table 32-10-0231-01 Farms classified by farm type, Census of Agriculture, 2021

Number of Animals by Region

As shown in Figure I, the Northeast, Nechako and North Coast regions together account for the highest

share of large animals (i.e. cattle, horses, sheep and goats) at 27 percent, followed closely by the Lower Mainland-Southwest at 26 percent and the Thompson-Okanagan at 23 percent. The Cariboo region accounts for 14 percent of large animals, Kootenay accounts for 5 percent and the Vancouver Island-Coast region accounts for 4 percent. There is relatively more diversity in the types of large animals in the Lower Mainland-Southwest and Vancouver Island-Coast regions, while the majority of large animals in the other regions are beef cattle.

Figure I: Number of Large Animals by Region - 2021⁶



Veterinarians Support Aquaculture Operations

Aquaculture contributes significantly to B.C.'s economy. In 2021, BC produced over 80,000 tonnes of farmed salmon valued at \$710 million.* Salmon farming supports approximately 7,000 full-time equivalent jobs in BC's coastal communities.**

Veterinarians working in aquaculture provide fish health management services including consultation, on-farm support, and fish health management planning and protocol development for fish producers. They also offer fish health screening and diagnostic services. These services enable aquaculture farmers to maintain healthy stocks which is essential for sustainable and profitable farming.

* B.C. Ministry of Agriculture and Food, November 2022

** BC Salmon Farmers Association. *Economic Impact*

⁶ Please note that data on pigs and poultry was not available for the Interior and Northern regions and has been excluded from this presentation.

Source: Statistics Canada, Inventory on Farms by type of Animal, Census of Agriculture, 2021

Economic Impacts of the Livestock Sector in BC

BC’s livestock sector is a significant contributor to BC’s economy. The revenue of the sector is measured by farm cash receipts. Farm cash receipts represent the cash income received from the sale of agricultural commodities outside the sector as well as farm-to-farm sales across provinces; but exclude inter-farm sales within a province.⁷

In 2021, total farm cash receipts from livestock products in BC were estimated at \$1.8 billion. Milk, poultry and egg production accounted for approximately 80 percent of farm cash receipts, cattle and calves production accounted for 14 percent and all other livestock production accounted for 6 percent.

In 2021, the total direct output for the sector was estimated to be approximately \$1.9 billion. As shown in Table 2 the estimated economic impacts generated in 2021 by the livestock sector were approximately:

- \$4.1 billion in total output, including direct output of \$1.9 billion and indirect and induced output of \$2.2 billion.
- \$1.5 billion in GDP, including direct GDP of \$389 million and indirect and induced GDP of \$1.1 billion.
- 20,300 total full-time equivalent (FTE) jobs in BC, including direct employment of 10,700 FTEs and indirect and induced employment of 9,600 FTEs.
- Approximately \$321 million in total government tax revenues, including \$59 million in direct tax revenues and \$262 million in indirect and induced tax revenues.

Table 2: Economic Impacts of the Livestock Sector in BC – 2021⁸

	Output (\$ million)	GDP (\$ million)	Employment (FTEs)	Federal Taxes (\$ million)	Provincial Taxes (\$ millions)	Municipal Taxes (\$ millions)
Direct	\$1,891.6	\$387.8	10,700	\$28.3	\$24.6	\$5.6
Indirect and Induced	\$2,251.0	\$1,068.7	9,600	\$116.0	\$115.2	\$30.8
Total	\$4,142.5	\$1,456.5	20,300	\$144.4	\$139.8	\$36.4

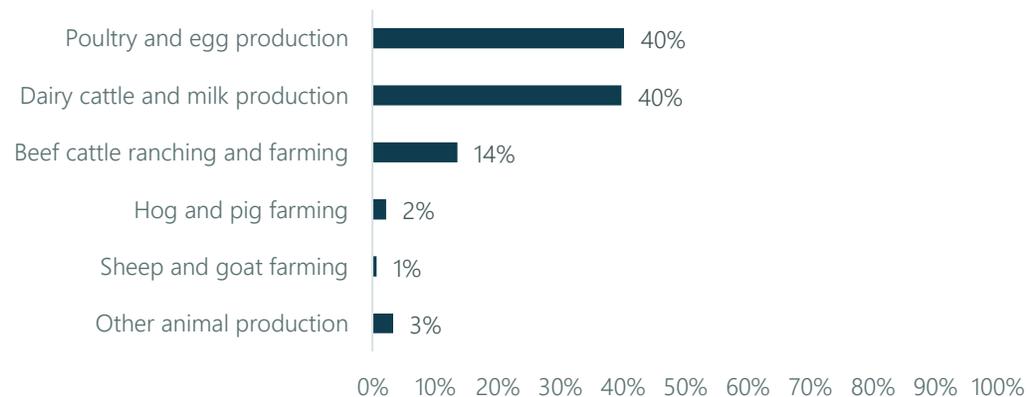
Dairy cattle and milk production and poultry and egg production each account for approximately 40 percent of the impacts generated by the livestock sector in BC. Beef cattle ranching and farming accounts for 14 percent whereas all other animal production accounts for approximately 6 percent of the impacts. Figure J shows the estimated economic impacts generated by the livestock sector in 2021

⁷ Statistics Canada. Farm Cash Receipts. Available here:
<https://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=3437>

⁸ Since farm-cash receipts exclude inter-farm sales and do not capture the total revenues, direct output estimates were derived using output data from the Statistics Canada supply and use tables and farm cash receipts.

by subsector.

Figure J: Share of Economic Impacts by Subsector – 2021



Access to Veterinary Services in BC

According to the findings of a labour market study conducted by CVMA in 2019, there is a shortage of veterinarians across all regions and most types of practices in BC. The shortage is more significant for large animal practices as well as specialized practices (e.g. oncologists, cardiologists etc.) and in regions that are outside the main urban centres. The study also noted that recruitment and salary competition from corporations and small animal practices in urban areas puts further strain on recruitment efforts of rural and large animal practices.

There were estimated to be between 250 and 300 veterinarians in BC who work in large or mixed animal practices.⁹ This suggests that provincially the ratio of animal farms to large animal veterinarians is between 24 and 29 per veterinarian, and the ratio of large animals and to large animal veterinarians is between 3,000 and 3,500 per veterinarian. However, practices and animals are not evenly distributed across the province.

Figure K compares the number of practices and number of large animals by census division. Despite high concentrations of large animals in the interior and northern regions, the number of veterinary practices is relatively low and not all practices provide services to large animals. In the Nechako region

Access in the Nechako Region

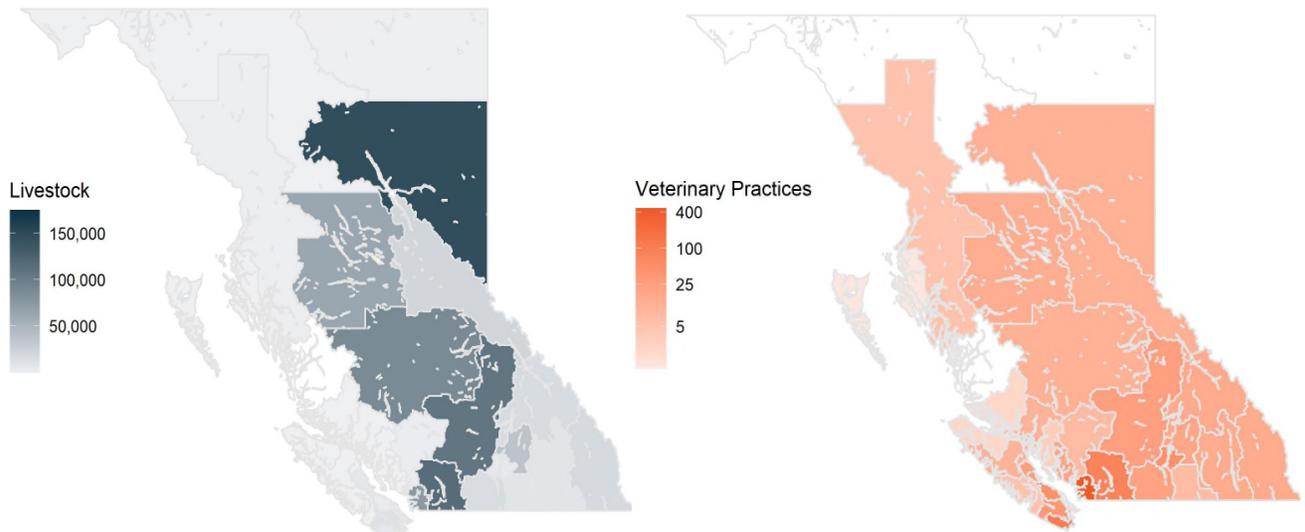
Interviews with producers and veterinarians in the Nechako region highlight the challenges faced by livestock producers in accessing veterinary services. Numerous livestock operations reported being without veterinary services for almost a year.

In the Vanderhoof area there is currently only one veterinary clinic able to provide services to livestock producers. The clinic is already operating at maximum capacity leaving many producers in the area without a veterinarian at this time.

⁹ This estimate is based on 16 percent of veterinarians in private practice working in mixed animal and large animal practices.

there were five accredited veterinary clinics identified, three of which are mixed animal practices providing services to small animals and livestock and one which provides services to small animals and horses.¹⁰ A total of seven veterinarians work in the practices providing livestock and equine services. The ratio of large animals to veterinarians in the region is approximately 8,900 per veterinarian, almost triple the provincial average. In the Northeast there were three clinics employing 19 veterinarians identified that provide services to large animals.¹¹ The ratio of large animals to veterinarians in the region is approximately 7,700 per veterinarian, roughly double the provincial average.

Figure K: Number of Veterinary Practices¹² and Livestock Head¹³ by Census Divisions



Sources: Statistics Canada, Inventory on Farms by type of Animal, Census of Agriculture, 2021 and Statistics Canada, Custom Tabulation of Business Register Data, Number of Businesses by Census Divisions- 2019

Financial Impact of Lack of Access to Veterinary Care

To illustrate the financial impact on livestock producers of the loss of an animal due to lack of veterinary care we estimated the cost to a rancher of losing a beef cow. Our estimates are based on the following assumptions:

- Average revenue from the sale of a beef cow is between \$1,200 and \$1,300.
- Production expenses for a beef cow are between \$900 and \$1,100.¹⁴ Of this, between 50 percent and 60 percent is feed cost and the remainder is other operating costs.

¹⁰ Estimated based on accredited facilities in CVBC’s online registry and services advertised by each veterinary clinic.

¹¹ Estimated based on accredited facilities in CVBC’s online registry and services advertised by each veterinary clinic.

¹² Includes establishments with and without employees.

¹³ Livestock include cattle, horses, sheep and goats. Please note that data on pigs and poultry for most regions were not available.

¹⁴ Based on review of cost of production estimates published by Government of Manitoba, Government of Alberta and MNP’s internal benchmarking.

Based on these assumptions, for every beef cow that is sold the rancher earns between \$200 and \$300 over their operating costs. This is used to cover fixed costs (e.g., buildings, land) and anything remaining after fixed costs is profit. When a cow is lost the rancher is out-of-pocket the production expenses and the sale of between three and five cows would be required to recoup those. This also means that there is less revenue to cover fixed costs which impacts the viability of the operation.



In addition, to the loss of the cow the rancher loses future calves that would have been born to the cow. Some of these calves would typically be used for herd replacement and some would be sold. Cows have on average eight calves over their productive life.¹⁵

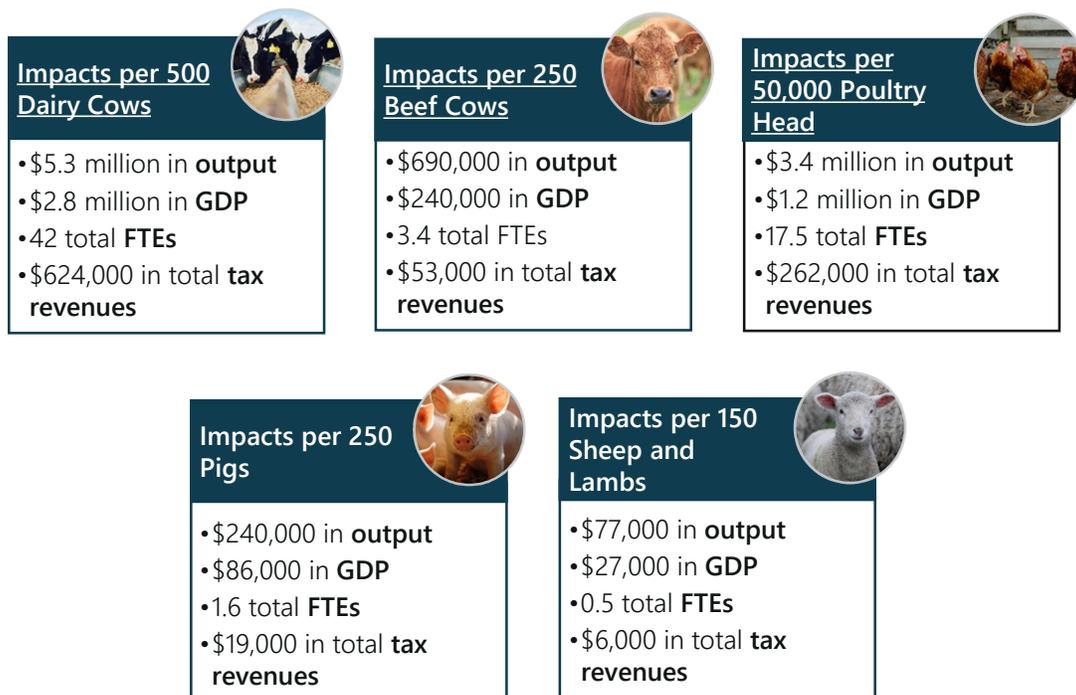
Economic Impact of Increased Access to Veterinary Care

In addition to the financial impact to producers of increased mortality, the lack of access to veterinary care affects the ability of producers to grow their operations. To illustrate the potential magnitude of the impact to the economy of producers growing their operations we estimated the economic impact for an average sized herd/flock by type of animal. As shown in Figure L:

- An additional 500 dairy cows contribute \$5.3 million in total output, \$2.8 million in total GDP and \$0.6 million in total tax revenues annually.
- An additional 250 beef cows contribute \$0.69 million in total output, \$0.24 million in total GDP and \$0.05 million in total tax revenues annually.
- An additional 50,000 head of poultry contribute \$3.4 million in total output, \$1.2 million in total GDP and \$0.26 million in total tax revenues annually.
- An additional 250 pigs contribute \$0.24 million in total output, \$0.086 million in total GDP and \$0.02 million in total tax revenues annually.
- An additional 150 sheep and lambs contribute \$0.077 million in total output, \$0.027 million in total GDP and \$0.006 million in total tax revenues annually.

¹⁵ Beef Cattle Research Council, *Economics of Raising or Buying heifers for Beef Cow Replacement*. Available here: <https://www.beefresearch.ca/blog/economics-of-raising-or-buying-heifers-for-beef-cow-replacement/>

Figure L: Total Direct, Indirect and Induced Economic Impacts by Animal



In addition to the impacts associated with additional livestock production, the operations of an additional veterinary practice would also create economic impacts. Table 3 shows the annual economic impacts generated per full-time veterinarian working in a mixed animal practice. These impacts primarily occur in the community in which the clinic is located.

Table 3: Economic Impacts per Full-time Veterinarian in a Mixed Animal Practice

	Output (\$)	GDP (\$)	Employment (FTEs)	Federal Taxes (\$)	Provincial Taxes (\$)	Municipal Taxes (\$)
Direct	\$599,900	\$325,700	4.2	\$33,700	\$20,700	
Indirect and Induced	\$316,400	\$184,300	1.3	\$22,200	\$24,100	\$6,100
Total	\$916,300	\$510,000	5.5	\$55,900	\$44,800	\$6,100

5. Case Study

Veterinary medicine contributes to the economy in BC in various ways, including through support of the livestock sector. Throughout the province, veterinarians and their animal care teams play a critical role in supporting livestock producers in the health and welfare of their animals. This support is a necessity for the viability of all sizes and types of livestock operations. The following case study explores the current state of access to veterinary care according to those both providing and accessing it in a rural region of central BC. **The case study highlights how access to care impacts the local livestock industry as well as residents requiring care for pets and other small animals.** While many farmers and ranchers are largely self-sufficient with respect to caring for their animals, veterinary services are required for urgent and emergent care, breeding soundness evaluations, disease outbreak investigations as well as the purchasing of medically important antibiotics and other supplies.

Information used to prepare the case study was obtained through secondary research and interviews with local veterinarians and cattle producers located in the community of Vanderhoof in the Nechako region.

Accessing Veterinary Services in the Nechako Region

Region Backdrop

Livestock production is a key economic driver in the Nechako Region. Communities throughout the region, including Burns Lake, Fort St. James, Fraser Lake, Granisle, Houston, Smithers, Telkwa, and Vanderhoof¹⁶ are supported and surrounded by a variety of agricultural operations, including livestock. In 2022, 437 total livestock operations were found in the region, with 249 of them being dedicated primarily to cattle ranching and farming. These operations consist of approximately 62,000 total animals, including nearly 56,000 cattle.¹⁷ In 2021, livestock production generated \$130.9 million in direct, indirect and induced output in the Nechako region.



The Nechako region is serviced by a total of five veterinary practices.¹⁸ Of these practices three practices offer services for livestock: Nechako Valley Animal Health Services; Burns Lake Veterinary Clinic; and Babine Animal Hospital and one provides equine services. Mobile veterinary practices may also offer services in the region.

¹⁶ Regional District of Bulkley Nechako. Available here : <https://www.rdbn.bc.ca/departments/economic-development/regional-information/area-profiles/municipality-profiles>

¹⁷ Statistics Canada. Table 32-10-0370-01 Cattle inventory on farms, Census of Agriculture, 2021

¹⁸ College of Veterinarians of British Columbia. <https://www.cvbc.ca/online-registry/>

This case study focuses on the community of Vanderhoof, a district municipality of 4,346 residents.¹⁹ The economy of Vanderhoof is heavily dependent on natural resources, including forestry and agriculture. Lack of fibre supply has led to curtailment at lumber mills in the region and reductions in harvesting activity. As forestry has declined agriculture and tourism have become increasingly important drivers of the local economy. Forage crops and cattle production are the main agriculture products produced in the region.²⁰ In 2021, 30,262 cattle and calves, valued at \$42.2 million, were sold at the Vanderhoof livestock auction.²¹

In Vanderhoof, Nechako Valley Animal Health Services (NVAHS) is currently the only veterinary practice in operation. NVAHS, owned by Dr. Cori Stephen, is supported by a team including Dr. Amanda Janzen, two registered veterinary technicians and administrative support.²² Providing care for nearly 4,500 animals per year, NVAHS is a mixed animal practice where Dr. Stephen and Dr. Janzen and their team divide their time between caring for small animals (70 per cent), equine (20 per cent), and food animals such as cattle, goats and sheep (10 percent). NVAHS's primary focus on small animal and equine care is due to high demand and ensuring the financial sustainability of the practice. As a significant portion of the care for cattle and other livestock is seasonal, the current demand would not sustain a full-time practice dedicated to large animals. Small animal and equine care is provided on an individual patient basis at the NVAHS clinic, whereas care for food animals is herd-based and requires on-farm visits or care at a more centrally located facility.



Demand for Veterinary Services in Vanderhoof

There are currently not enough veterinarians, registered veterinary technicians or qualified support and administrative staff to meet demand for veterinary services in the region. The pressure for veterinarians to be available at all times has serious implications on the ability to ensure a work life balance for the

¹⁹ Statistics Canada. 2022. (table). Census Profile. 2021 Census of Population. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released December 15, 2022.

²⁰ Regional District of Bulkley Nechako. District of Vanderhoof. Available here: <https://www.rdbn.bc.ca/departments/economic-development/regional-information/area-profiles/municipality-profiles/vanderhoof-profile>

²¹ Vanderhoof Livestock Auction statistics provided by the BC Livestock Co-op.

²² Nechako Valley Animal Health Services website. https://www.nvahs.com/nvahs-team/?_sm_pdc=1&_sm_rid=5QPn7tZjwDt7rZ0Zswtt2sJSRPn4Mn7tZRn3Ptr

animal health team. The demand for veterinary services in Vanderhoof is currently at an all-time high.²³ The region is estimated to have experienced a 30 percent increase in its pet population in recent years, in line with a national surge in pet ownership during the COVID-19 pandemic that has resulted in a significant demand for small animal care and products.²⁴ The closure of another veterinary clinic in the area due to retirement has also increased the demand on the veterinarians and staff at NVAHS. Many of the clients of the closed practice, including livestock producers, have now turned to NVAHS veterinarians for animal care. To accommodate the demand, Dr. Stephen and Dr. Janzen are typically scheduling between 21 to 26 appointments per day, four days per week and staff are working upwards of 48 hours in those four days alone. The nearest small animal emergency clinic is upwards of 10 hours away, leaving the NVAHS team as the only option to provide after-hours emergency care. The veterinarians are also doing their best to accommodate livestock producers who contact the clinic with a specific problem and extending their hours to help accommodate producer requests.

Another important change impacting demand on veterinary services at NVAHS is increased regulation around accessing medically important antimicrobials (MIA's) for use in animals.²⁵ The changes to MIA's in 2018 were made in response to the global issue of antimicrobial resistance (AMR) in bacteria in both animals and humans. The implementation of these changes aimed to help slow and reduce the development of AMR in animal pathogens. The

regulations align with "One Health" which is a unifying approach set out by the World Health Organization to balance and optimize the health of people, animals and ecosystems.²⁶ As a result of the regulations introduced in 2018, livestock producers are no longer able to purchase certain MIA's over-the-counter, including penicillins and

"Our biggest challenge is staffing – without more veterinarians in the area, we are limited in the amount of care that we can provide these animals."

- Dr. Amanda Janzen

oxytetracyclines (Terramycin Scour tablets). These MIA's, which are administered for both preventative care and as treatment, are now required to be purchased through a veterinarian. Other medications commonly used in livestock care such as Resflor and Draxxin have always been available exclusively through a veterinarian; however, a Veterinarian Client Patient Relationship (VCPR)²⁷ is now required to acquire them.²⁸ NVAHS, as well as the Canadian Cattle Association, industry reps and other stakeholders

²³ MNP Interview Findings

²⁴ "Vets swamped by surge in 'pandemic pets'. Joseph Tunney. CBC. January 30, 2021. <https://www.cbc.ca/news/canada/ottawa/delay-pet-care-national-shortage-1.5894161>

²⁵ Health Canada, Responsible use of Medically Important Antimicrobials in Animals. September 3, 2021. Available here: <https://www.canada.ca/en/public-health/services/antibiotic-antimicrobial-resistance/animals/actions/responsible-use-antimicrobials.html>

²⁶ World Health Organization https://www.who.int/health-topics/one-health#tab=tab_1

²⁷ Guide to the Professional Practice Standard: Veterinarian-Client-Patient Relationship (VCPR) <https://www.cvbc.ca/wp-content/uploads/2020/03/Guide-to-the-VCPR-Standard.pdf>

²⁸ College of Veterinarians of British Columbia. Changes to Health Canada Regulations: Medically Important Antimicrobials. <https://www.cvbc.ca/wp-content/uploads/2020/03/Changes-to-Health-Canada-Regulations-Mar.-2018.pdf>

have been communicating the changes related to VCPR requirements and access to MIA's since 2017 in efforts to ensure the transition is manageable for both producers and the veterinary medical industry.

In a region already under-served in terms of number of veterinarians and support staff, Dr. Stephen and Dr. Janzen are currently working as quickly as possible to accommodate and manage their client wait lists for both livestock producers seeking to establish a VCPR as well their small animal/equine wait list of over 100 clients seeking veterinary care.

Attempts to alleviate the demand pressures by recruiting more veterinarians to the area have proven difficult. In addition to the limited number of annual veterinary graduates in Canada, attracting veterinarian graduates to any rural community and also into a large or mixed animal practice can be a challenge.

Access to Care for Livestock Producers

Access to veterinary services is an ongoing and growing concern for many livestock producers in the Vanderhoof region. While many producers provide most of the care that their animals require, veterinary services are also a necessity for emergent care, breeding soundness evaluations, disease outbreak investigations as well as the purchasing of MIA's and other supplies. Many livestock operations also require care for other animals on the farm or ranch, including horses, herding dogs and pets. In many cases the services required by producers involve unscheduled or after-hours care, resulting in higher demand on the over-capacity workload of the local veterinarians. The limited access to veterinary care within close proximity has led many producers to seek alternate solutions, creating uncertainty for the sustainability and growth of their operations.²⁹



Several livestock producers who either had an established VCPR with the veterinarian in Vanderhoof who retired, or who did not have one at all, are seeking to establish a VCPR with the NVAHS to secure specific medications. With the limited capacity of NVAHS to accommodate all livestock producers who are seeking care, some producers were added to a waiting list and others have sought veterinary service elsewhere in the region.

Donna Gould and her husband run a local cow-calf operation 20 kilometres east of Vanderhoof. Until the retirement of their local veterinarian, the Gould's 200 head of cattle were regularly visited by their veterinarian two to three times a year. Currently on a waiting list for veterinary care, the Goulds have not been able to secure antibiotics for the upcoming calving season and have real concerns about the future of their operation. The Goulds have sought veterinary care in surrounding communities, from Burns Lake to Quesnel, but have not been successful as of January 2023.

²⁹ MNP Interview Findings

Similar to the Goulds, producer Jay McKee and his wife run a cow-calf operation near Vanderhoof. The difficulty in obtaining antibiotics to treat illnesses like pneumonia in his herd, for example, has raised concern over their ability to maintain and grow their operation. The McKees current operation involves 150 head of cattle, and they would like to grow the operation to 400 head of cattle in the next five to ten years. However, without adequate access to veterinary services due to the shortage of veterinarians in the region, this growth will not be feasible. The McKees are one of a group of producers who have had to look to other communities for veterinary services, and are optimistic about establishing a VCPR in the near future. After enquiring with 15 veterinary practices in a 200 kilometer radius from their operations, a veterinarian in Prince George (100 kilometres away) may be able to provide the services they require prior to calving season.

"We do need more veterinary graduates – but that is a long-term fix. Vanderhoof needs a solution now in order to mitigate losses to our operations."

- Jay McKee, livestock producer

For producers who currently do have access to veterinary services, many are required to travel to receive them. Lyle Wiens runs a 330-head cow-calf operation located 15 kilometers outside of Vanderhoof; however, his veterinarian is located over an hour away. In instances of animals requiring emergency care, Mr. Wiens generally has three options: transport the animal for care when the veterinarian has availability; provide emergency care himself to the best of his ability and with the resources available; or euthanize the animal. In the past year, there were two instances where veterinary service wasn't available in an emergency situation, leaving euthanizing the animal as the only option for

"If the question is do all producers have access to adequate veterinarian care in the region, I'd say that we absolutely do not."

- Lyle Wiens, livestock producer

Mr. Wiens. If veterinary services were available in closer proximity or with the ability to provide on-farm emergency care, the welfare of his animals would be improved and both animal and financial loss reduced.

To be as financially prudent as possible, producers are mindful of when they need to access care. Livestock producers strive to keep preventative treatment and emergency treatment costs as low as possible. Medications are only administered as needed to optimize the health of their animals and emergency care is requested only when necessary. The average annual costs paid by producers for veterinary care varies by the size of the herd and the care required. Estimates from interviewed producers average between \$15 - \$30 per head, per year.

The situations of these producers emphasize the shortage of veterinarians in the Vanderhoof region and the distances they need to travel to receive the proper and sufficient care needed to run their operations. The sentiment among producers in the area is that of concern for the wellbeing of their herd and future growth of the operation. Overall, a lack of access to adequate veterinary services puts livestock producers in a position of uncertainty on whether they will continue to invest in their operations and seek expansion. Producers recognize the efforts of their local veterinarians and that they must balance the needs of all clients and take into account safety, client relationships and other

important factors such as work life balance and mental health. Local producers and veterinarians have a shared understanding of the need to find a long-term solution to graduate additional veterinarians and recruit more to the area; however, they also identify a need for immediate relief in Vanderhoof and other rural regions.

Potential Economic Impact of Growth for Livestock Producers

The three livestock producers interviewed for this case study identified a desire to grow their operations in the coming years; however, growth is dependent upon several factors. With the uncertainty of access to veterinary care a primary concern, availability of land and market conditions also factor into decision making.

To illustrate the economic impact to the region associated with the growth of these operations we assumed that each operation would add 100 head of cattle. Based on the economic impacts estimated earlier in this report, an increase of 300 beef cows produced would result in the following economic impacts on **an annual basis**:

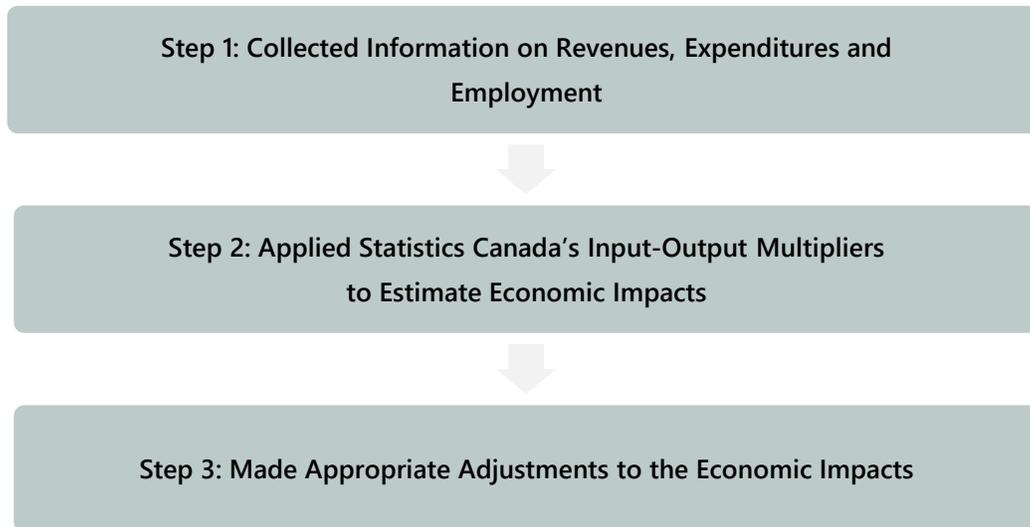
- \$830,000 in total output
- \$292,000 in total GDP
- 4 FTEs
- \$32,000 in total taxes

An additional 300 head of cattle between these three operations represents an approximate 44 percent growth from current size of operations.

Appendices

Appendix A – Economic Impact Methodology

MNP’s approach to economic impact modelling is based on published Statistics Canada multipliers and input-output modelling. A step-by-step overview of our approach to estimating the economic impacts is as follows:



Economic Impacts of the Livestock Sector

1) Collected Data and Estimated Direct Output of the Sector

To estimate direct output of the Sector, MNP collected data on output and farm cash receipts from Statistics Canada. To ensure inter-farm sales were captured, MNP used 2019 output data from Statistics Canada’s Supply and Use tables³⁰ and growth in farm cash receipts from 2019 to 2021 to estimate output in 2021. MNP also collected information on employment generated by the livestock sector from Statistics Canada’s Labour productivity and related measures data set (Table 36-10-0480-01)

2) Applied Statistics Canada’s Input-Output Multipliers to Estimate Economic Impacts

Statistics Canada’s 2019 input-output multipliers for BC were then applied to the direct output to estimate the economic impacts generated in BC by the livestock sector. Statistics Canada’s input-output multipliers produced estimates of direct, indirect and induced output, GDP, and employment.

³⁰ The Supply and Use Tables shows the total output/supply by industry. It also shows the goods and services used by each industry in the production of their goods and services along with the costs of primary inputs used in production.

3) Made Appropriate Adjustments to the Economic Impacts

- The direct employment estimates produced by the multipliers were then compared with the employment numbers from Statistics Canada's Labour productivity tables and adjusted accordingly.

Economic Impacts of the Livestock Sector

1) Collected Information on Revenue, Expenditures and Employment of Veterinary Practices

- MNP collected information on revenues, expenditures and employment from the Canadian Veterinary Medical Association's (CVMA) economic survey of veterinary practices. The survey provides estimates per Full-Time Equivalent (FTE) veterinarian working 1,750 hours annually. Estimates are provided for small animal practices and mixed and large animal practices. Practice wide estimates were developed using total number of active veterinarians by type of practice and average annual hours worked. According to the survey of veterinarians that was done as a part of CVMA's Labor Market Study, veterinarians in BC work an average of 38 hours a week. This translates into approximately 1,970 average annual hours worked per veterinarian.

2) Applied Statistics Canada's Input-Output Multipliers to Estimate Economic Impacts

- Statistics Canada's 2019 input-output multipliers for BC were then applied on revenues to estimate the economic impacts of operations of veterinary practices. The expenditure profiles collected in Step 1 were compared with Statistics Canada's Supply and Use tables to identify the relevant industry multipliers to be applied.

3) Made Appropriate Adjustments to the Economic Impacts

- The information collected in Step 1 was then compared with the estimates generated by the multipliers such as wages and salaries, and employment. Based on the comparisons, adjustments were then made to the economic impacts produced by the multipliers.

Appendix B – Economic Impacts of the Livestock Sector by Subsector

Table 4 presents the estimated economic impacts generated by the livestock sector in 2021 by subsector. Dairy cattle and milk production and poultry and egg production each account for approximately 40 percent of the impacts generated by the livestock sector in BC. Beef cattle ranching and farming accounts for 14 percent whereas all other animal production accounts for approximately 6 percent of the impacts.

Table 4: Economic Impacts of the Livestock Sector by Subsector in BC

	Output (\$ million)	GDP (\$ million)	Employment (FTEs)	Federal Taxes (\$ million)	Provincial Taxes (\$ millions)	Municipal Taxes (\$ millions)
Dairy Cattle and Milk Production						
Direct	\$754.5	\$154.7	4,250	\$11.3	\$9.8	\$2.2
Indirect and Induced	\$897.9	\$426.3	3,800	\$46.3	\$46.0	\$12.3
Total	\$1,652.4	\$581.0	8,050	\$57.6	\$55.8	\$14.5
Beef Cattle Ranching and Farming						
Direct	\$257.6	\$52.8	1,450	\$3.9	\$3.3	\$0.8
Indirect and Induced	\$306.5	\$145.5	1,300	\$15.8	\$15.7	\$4.2
Total	\$564.1	\$198.3	2,750	\$19.7	\$19.0	\$4.9
Poultry and Egg Production						
Direct	\$762.7	\$156.4	4,300	\$11.4	\$9.9	\$2.3
Indirect and Induced	\$907.7	\$430.9	3,900	\$46.8	\$46.5	\$12.4
Total	\$1,670.4	\$587.3	8,200	\$58.2	\$56.4	\$14.7
Hog and Pig Production						
Direct	\$41.5	\$8.5	200	\$0.6	\$0.5	\$0.1
Indirect and Induced	\$49.4	\$23.5	200	\$2.6	\$2.5	\$0.7
Total	\$90.9	\$32.0	400	\$3.2	\$3.1	\$0.8
Sheep Farming						
Direct	\$13.4	\$2.7	100	\$0.2	\$0.2	\$0.0
Indirect and Induced	\$15.9	\$7.6	100	\$0.8	\$0.8	\$0.2
Total	\$29.3	\$10.3	200	\$1.0	\$1.0	\$0.3
Other Animal Production						
Direct	\$61.9	\$12.7	400	\$0.9	\$0.8	\$0.2
Indirect and Induced	\$73.6	\$35.0	300	\$3.8	\$3.8	\$1.0
Total	\$135.5	\$47.6	700	\$4.7	\$4.6	\$1.2

Appendix C – About MNP

For over 60 years, MNP has proudly served and responded to the needs of clients in the public, private and not-for-profit sectors. Today, MNP is the fifth largest Chartered Professional Accountancy and business consulting firm in Canada and is the only major accounting and business consulting firm with its head office located in Western Canada. MNP has more than 117 locations and over 7,100 team members across the country.

MNP Consulting Services

MNP Consulting provides a broad range of business and advisory services to clients including:

- Strategy Development and Planning
- Stakeholder Engagement
- Performance Measurement
- Economic Analysis
- Research
- Data and Analytics
- Business Plans and Feasibility Studies
- Performance Improvement
- Financial Analysis



About MNP’s Economics and Research Practice

Economic and industry studies are carried out by MNP’s Economics and Research practice. Based in Vancouver, the Economics and Research practice consists of a team of professionals that has a successful track record of assisting clients with a wide variety of financial and economic impact studies. Our work has encompassed a wide range of programs, industries, company operations and policy initiatives, and has helped clients with decision-making, communication of economic and financial contributions, documentation of the value of initiatives and activities, and development of public policy.

MADE ^{IN} CANADA

And proud of it!

At MNP we're proud to be the national accounting, tax and business consulting firm that is 100% Made in Canada.

Why is this important? Because it defines who we are and our approach to business. It has helped shape our values, our collaborative approach and the way we work with our clients, engaging them every step of the way.

Our history gives us a unique perspective. We know Canada because we are a part of Canada. All of our decisions are made here – decisions that drive Canadian business and help us all further achieve success.

And the sense of strong Canadian commitment, being a part of every community, we live and work in, and always being there through prosperous and challenging times.

Being 100% Canadian is something we wear proudly because we know the great opportunities that exist here. The opportunities that have been afforded to our firm, the same opportunities that we deliver to our clients.



Wherever business takes you

MNP.ca