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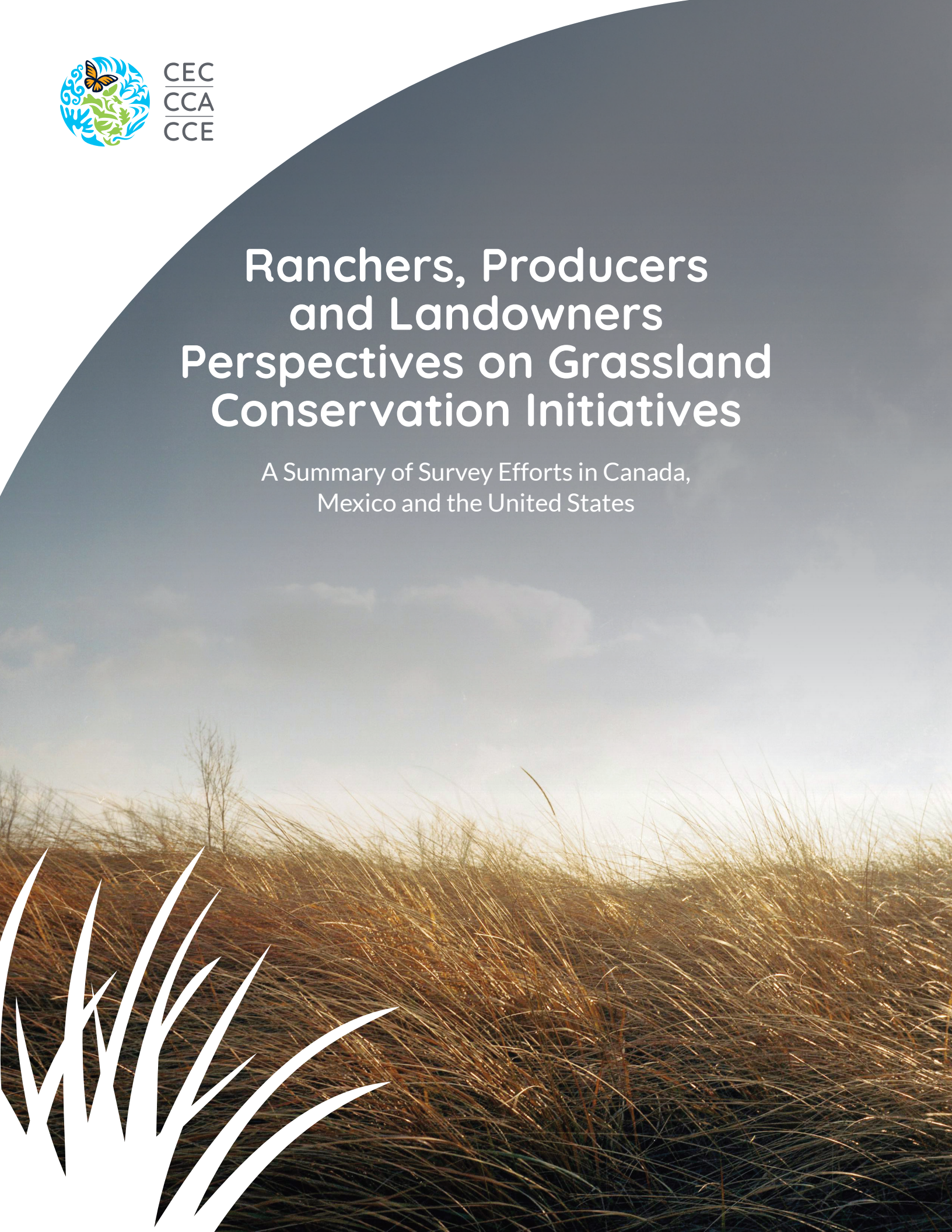
Ranchers, Producers and Landowners Perspectives on Grassland Conservation Initiatives

A Summary of Survey Efforts in Canada, Mexico and the United States



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Playa Lakes Joint Venture (PLJV) is a non-profit organization dedicated to conserving the playas, prairies and landscapes of the western Great Plains to benefit birds, other wildlife, and people. PLJV is one of 25 migratory bird joint ventures working to build a healthy world for birds, other wildlife, and people. Social science-trained staff who assisted with the preparation of this report include Zach Hurst, Ashley Gramza and Ryan Roberts.

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List of Abbreviations and Acronyms

CEC	Commission for Environmental Cooperation
PLJV	Playa Lakes Joint Venture
CGR	Central Grasslands Roadmap

Abstract

The Central Grasslands contain the largest areas of intact grasslands in North America and include prairies in Canada, the United States and Mexico. The Central Grasslands Roadmap initiative was formed as a collaborative guide to increase conservation of North America's Central Grasslands. To help ensure that the perspectives of landowners, agricultural producers, and ranchers are included in grassland conservation initiatives, such as the Roadmap, a survey was conducted in the United States. The Commission for Environmental Cooperation then conducted two additional surveys in Canada and Mexico. These surveys examined rancher, producer and landowner perspectives related to conservation programs, metrics, communications, and engagement. The results of the surveys were then summarized, and the responses were thematically compared, where possible. This report highlights the challenges associated with undertaking a social science effort spanning three countries and acknowledges the importance of these different perspectives and the effort that was expended to understand them across such a broad geographic area. When assessing differences in landowner perspectives between countries, the development and design of surveys become especially important. Future social science efforts will have a higher potential for detecting differences if they are designed with consideration of some of these challenges. In general, responses from the United States and Canada were more similar than are those from Mexico, where communal lands (*ejidos*) are more common. Landowners, producers, and ranchers across the Central Grasslands see themselves as stewards, who want to be incentivized to sustainably produce. Ranchers must be adaptive and responsive to their environment, and programs that enable such flexibility will likely be successful in attracting people to participate. Assisting landowners, producers, and ranchers with measures that document their stewardship, can help them with their decision-making and in helping to communicate this important role to the public. Survey respondents felt that "one-size-fits-all" approaches to conservation are not an appropriate way to engage with ranchers, agricultural producers, and landowners. Efforts to find commonalities must be balanced with an appreciation of the diversity of the inhabitants of the Central Grasslands. Accordingly, the goals and objectives of engagement efforts should be considered at the outset, with engagement designed using social science-based methodologies for these populations of interest.

Executive Summary

The Central Grasslands contain the largest areas of intact grasslands in North America. This region encompasses the short, mixed, and tallgrass prairies east of the Rocky Mountains and spans from southern Canada's prairie provinces, through the United States, to northern Mexico. These areas are an important location for both agricultural production and biodiversity. However, this region is also experiencing significant declines in habitat's quality and extension. In response to the challenges related to maintaining habitat and conserving wildlife while maintaining food production, the Central Grasslands Roadmap (CGR) initiative is bringing together diverse stakeholders to form a "shared vision for the future of the region." To help ensure that the perspectives of landowners, agricultural producers, and ranchers are included in this vision, the Commission for Environmental Cooperation (CEC) conducted surveys in Canada and Mexico in 2022, to complement the 2021 survey conducted in the United States by the CGR. These surveys examined perspectives related to conservation programs, metrics, communications, and engagement. In this report, these surveys are summarized, and responses are thematically compared where possible; however, they should not be interpreted as generalizable to the populations in these countries. Overall, these surveys point to the following recommendations:

> ***Coordinated, face-to-face communications***: Landowners, producers, and ranchers in all three countries preferred in-person meetings and events for gathering and sharing information about programs.
>
> ***Social science-based information:*** As grassland conservation initiatives continue to develop, more effort should be devoted to understanding the local contexts of the ranchers', producers' and landowners' land management, production systems and decision-making. Programs should seek to account for this variation in their design.
>
> ***Reward and acknowledge good practices***: Landowners, producers, and ranchers view themselves as stewards of their lands and communities. Programs that align incentives to reward the outcomes of this stewardship are more likely to be viewed favorably than those that restrict land management options or punish behaviors that are detrimental to conservation.

Landowners, producers, and ranchers also feel that they are providing a key role in the conservation of the Central Grasslands, but that this role is not always well-communicated to the public and management agencies. Where appropriate, their positive impact should be documented and communicated via social and ecological metrics, and this is an opportunity to those involved with the Central Grassland Roadmap.

Acknowledgments

The authors of this report would like to thank those who developed the surveys in Canada, Mexico and the United States and provided the content for this report, as well as the ranchers, producers and landowners who participated in the surveys.

1 Introduction

The Central Grasslands are found throughout the middle of North America and encompass parts of three countries, Canada, Mexico and the United States (Fig. 1). This region is home to the largest expanses of grasslands that are still found within North America. However, these grasslands are being lost at a fast rate due to several reasons, including crop conversion, development, and invasive species, among others.

The Central Grasslands are important for agricultural production, providing a significant portion of the beef and grain production of their respective countries. Agricultural production has often come at the expense of wildlife, as lands are converted or impacted as a result of production activities.

These grasslands also face the threat of woodland conversion due to invasion by woody plants, as well as non-native plants, trees, and shrubs. Certain portions of the region are also adversely affected by fragmentation and loss as a result of non-renewable energy extraction, renewable energy development and the expansion of urban and developed areas.

The threats to the Central Grasslands have also resulted in significant losses of wildlife habitat. As a result of this habitat loss, the species inhabiting this region are experiencing some of the most significant declines of any in North America. Iconic species such as the pronghorn (*Antilocapra americana*) have largely been extirpated from their historic ranges, while others, such as grassland bird, pollinators, and freshwater aquatic species, have been reduced to a fraction of their former numbers (Cameron et al. 2011; Perkin et al. 2017; NABCI, 2022). Grassland birds are now the focus of several conservation efforts, as there is more awareness of their drastic declines (Rosenberg et al. 2019).

In response to the severe losses of North America's grasslands, the Central Grasslands Roadmap initiative was established to bring together diverse stakeholders for a more unified vision of the region's future. Given the diversity of people and ecosystems of the region, creating a unified vision and roadmap for grassland conservation action across three countries is a complex task.

1.1 Survey and Sampling Efforts

To help ensure that the perspectives of ranchers, landowners, and other agricultural producers were included in the Central Grasslands Roadmap, a series of three questionnaires were administered in Canada, Mexico and the United States. These surveys were intended to fit into the larger engagement strategy of the Roadmap, that included separate strategies for the three countries, Indigenous nations, and seven sectors involved with the effort. These questionnaires were conducted sequentially and non-concurrently. After the CGR completed the first survey (United States) in 2021, the Commission for Environmental Cooperation funded an expansion of this survey effort, first to cover Canada and then Mexico in 2022, and then contracted Playa Lakes Joint Venture in 2023 to summarize the responses to these surveys and identify commonalities across them.

Figure 1. Map of the Central Grasslands region that spans Canada, Mexico and the United States

Each of the three surveys was conducted by different investigators with slightly different goals. This variation resulted in different survey instruments and sampling approaches. In general, the goals for each of the surveys related to understanding producer perspectives, but with slightly different populations of interest. For example, the stated goal of the US survey was to gather input and feedback from ranchers, landowners and producers to "ensure that the priorities identified in the Central Grasslands Roadmap will be able to support them as much as possible from their point of view." As it was the original survey, the US survey served as the basis for the others. The stated goal of the Canadian survey was to create a "baseline understanding of

producer perspectives," while the Mexican survey specified ranchers and landowners as the population of interest.

Each survey also had different sampling approaches, likely to do with different access to respondent contact information and different investigators. The US survey was developed by members of the Central Grasslands Roadmap leadership team, along with input from others within the conservation community. The Canadian survey was developed by Pattison Resource Consulting Ltd. with feedback from producer groups, Prairie Habitat Joint Venture, a human dimensions committee and academic experts. The Mexican survey was developed by staff of *Pronatura Noreste* with input from the Commission for Environmental Cooperation's project steering committee members.

The sampling strategy varied slightly among the different countries, with all of them conducted using convenience sampling of various respondent contact lists. The US survey recruited participants using the Central Grasslands Roadmap initiative's associated email lists which was focused on distribution via groups working with landowners (e.g., Audubon Rockies, National Wildlife Federation, Pheasants Forever/Quail Forever, Bird Conservancy of the Rockies). The Canadian survey was distributed electronically to the members of the Canadian Cattle Association. The Mexican survey incorporated snowball sampling: it was distributed to farmers on social media (Facebook and WhatsApp) who then forwarded the survey to others within their networks. Investigators also distributed a paper survey to individual producer contacts. Since there was a lack of randomized and representative sampling of ranchers, producers, and landowners, there is uncertainty on how well these results reflect the views of these populations. Thus, given this limitation and the differences in sampling approaches, these findings should not be generalized to landowners, ranchers, and producers in the three countries.

1.2 Survey Instruments

As derivatives of each other, the survey instruments covered similar topic areas related to conservation programs, metrics, and communications. Where possible, responses were compared to survey questions across the three countries, and commonalities and differences were discussed. However, direct comparisons weren't always possible because of survey differences stemming from various investigators and variations in cultural contexts. The Canadian and Mexican surveys (conducted after the initial US survey) also included additional questions that were not in the US survey. More specifically, the Canadian survey asked respondents about their perceptions of Canada's grasslands. The Mexican survey asked more in-depth questions about programs, including those that were not conservation-related (e.g., production support programs). These country-specific questions aren't covered in this comparison report but can be found in the individual survey reports (CGR, 2021; CEC 2025a, 2025b).

Despite their similar thematic elements, the surveys had few questions with exactly the same wording (Appendix A). The US survey used a 4-point Likert scale while the Mexico and Canada surveys used 5-point Likert scales. These surveys also included categorical response options, although these were not consistent across all surveys. Finally, all surveys had options for respondents to provide comments and short answers to some questions. Survey flow and logic

also varied among the surveys. Not all questions were displayed to respondents in the same order, and some questions were displayed to different subsets of respondents. For example, all respondents in the Mexican survey answered a question about preferred information sources, while in the US and Canadian surveys, only those interested in programs were shown this question. Differences in survey format and logic can potentially affect responses, providing yet another comparison challenge (Dillman et al., 2014).

The questions and wording varied so much that question by question comparisons were impossible. Likewise, although all the surveys contained the same thematic areas related to program engagement, needs, metrics, and suggested messaging, the differences were too great to allow direct comparisons due to the survey logic, the wording of questions and the context (e.g., different programs available in each country).

Thus, due to the limitations outlined above, comparison was limited across surveys to a thematic analysis of general patterns. Such an approach to interpretation can complement the goals of other engagement efforts of the Roadmap (e.g., the Central Grasslands Summit, in-person and virtual events and conversations, etc.). The inferences in this report are conservative to reduce the potential for misleading interpretations of survey-to-survey congruity.

2 Results

2.1 Sampling Period and Number of Responses

The US survey was conducted from May to August 2021 (CGR, 2021), the Canadian survey was conducted from April to May 2022 (CEC, 2025a), and the Mexican survey was conducted from September to October 2022 (CEC, 2025b).

Each of the surveys had over 100 responses, with the Mexican survey having the highest number of responses (n = 172), followed by the US survey (n = 153) and the Canadian survey (n = 104). The sampling methodology of the surveys, which involved either posting on social media or email distribution, along with the database structure, meant that a response rate could not be determined for any of the surveys. Hereafter, when presenting results, they will be presented in the order in which they were completed (United States, Canada, Mexico).

2.2 Respondent Characteristics

Not all the surveys provided information about their respondents. The US survey did not collect any demographic information. It was assumed that the respondents were ranchers, producers, and landowners, but there was no explicit identity question or check included in the survey. However, it may have been part of the recruitment material.

The other surveys asked some questions about their respondents. The Canadian survey received responses from mostly male (76%) respondents in their 40s (mean = 49 years). The majority of these respondents were from the prairie provinces and had between 100–250 cattle in their operations. The Mexican survey respondents were mostly found in the Chihuahuan Desert

states, with a majority (54%) indicating they were private landowners. A high proportion (28%) of Mexican respondents indicated they were associated with communal lands or ejidos.

3 Key Findings

3.1 Programs

Across the different surveys, approximately 50% of respondents were involved with some form of program, although the type of program varied. They included government conservation programs (United States, Canada) as well as agricultural support (Mexico) programs. It is likely that the sampling methodology which included distribution via livestock organizations resulted in a bias towards larger operations which may have overrepresented the proportion of respondents who were in programs (Lubell et al., 2013).

Each of the individual survey reports identified key takeaways that they highlighted as being most important, and these takeaway messages had similarities across the three countries. These included:

Communications: Common to all surveys, respondents preferred to learn about programs via in-person events rather than via other methods, such as flyers or virtual workshops.

Characteristics: In general, respondents felt that the programs were not well suited for their local conditions. In the US survey, respondents expressed a desire for more flexibility in their ability to tailor programs to their local conditions. In the Canadian survey, respondents expressed a desire for programs that were administered by nongovernmental organizations, which would allow the programs to be more adaptable. In the Mexican survey, respondents wanted to have more specific support and technical training on practices related to their specific conditions.

Payments: Across the three surveys, respondents preferred programs that provide payments for ecosystem services. Respondents in the United States expressed support for programs that "reward the good," while in Canada, respondents indicated this as a preference for ecological goods and services programs.

Barriers: Bureaucracy and governmental program administration were mentioned as barriers to participation in programs. In the United States, it was related to a perceived loss of autonomy, viewing program payments as a government handout and excess paperwork. In Canada, respondents stressed the bureaucratic burden that was often associated with projects. In Mexico, a lack of assistance, planning support and technical resources were cited as problems related to programs.

3.2 Suggestions for New or Expanded Programs

In each of the surveys, respondents were asked to provide suggestions for new or expanded programs that would "support range improvement, cattle production, soil health and/or water conservation (United States, Canada)." Suggestions could be grouped into three main categories:

1. **Education and Technical Assistance** (information regarding specific management practices [e.g., soil health training] and operations [ranching for profit];
2. **Resources** (payment for ecosystem services, project planning help);
3. **Policy** (reduction in regulations, producer-friendly tax structures, subsidies to favor ranching/equalize crop and ranching support, support for small producers, support for fair market access).

In addition, respondents across the surveys suggested programs that could provide these resources in a way that was specific to local areas and conditions. One of the strongest themes to emerge throughout was the focus on ecosystem services. In relation to program characteristics, these related to the preference for incentive-based approaches for beneficial practices rather than approaches focused on regulations and penalties.

Respondents of the Mexican survey were not asked about suggestions for programs, but rather about what motivated them to participate in programs and what failures and problems they had experienced. They responded that they would be more motivated to participate in programs that resulted in increased production (30%), environmental improvements (21%), and sustainable development (13%). In addition, they reported problems with projects that were largely tied to program administration and lack of program support. These problems were identified as a lack of follow-up (23%), limited funding and resources (16%), and a lack of design/planning help (13%). These problems and the motivations that were identified to participate in programs highlight the importance of ensuring that programs are well supported within an organization, financially and in their conservation delivery and education and outreach capacity to assist landowners in their management.

3.3 Programs—Additional Insights

Interestingly, many respondents in Canada and Mexico were enrolled in multiple programs. Of the Canadian respondents who were enrolled in a program, a majority (72%) were enrolled in two or more. In the Mexican survey, approximately one quarter (22%) were enrolled in two or more programs, but the relative number of programs offered, or their availability is unknown. This redundant participation indicates an opportunity for engaging landowners with conservation programs.

Although the variation of the surveys reduced the ability to make many direct comparisons, there is still useful information that could be used for follow-up or additional studies.

3.4 Implications

The respondents in all surveys were generally receptive to participation in conservation programs, which may vary from ranchers, other agricultural producers and landowners who don't produce agricultural products or who were not within the sample. Participants in a program may be more receptive to enrollment in other conservation programs. However, this receptivity did not equate to an absence of suggestions for programs. Rather, it was expressed that locally tailored and controlled programs that were conducted face-to-face would likely be most well received by ranchers, producers, and landowners. Accordingly, programs that target these groups should be incentive based, reliable in their payments and support, well administered to reduce burdens for participants, and that support knowledgeable local staff for engagement.

4 Measures to Track

4.1 Common Measures

There were challenges related to the interpretation of different responses related to the metrics that were identified among the different surveys. Respondents were prompted to identify important measures to track for "understanding the success of cattle production and the health of the grasslands" (United States, Canada) or ways they evaluate the "success of their operation" (Mexico). Across surveys, respondents indicated whether they used pre-identified measures (Mexico) or to supply important measures (United States, Canada). The Mexican survey did not solicit specific metrics, but rather types of metrics that were used by respondents. The metrics that were used most frequently were production followed by economics, environmental and quality of life. In the US and Canadian surveys, the respondents supplied important measures to track. The measures included in the survey responses covered the social, ecological, and production domains of sustainability. Among these metrics, those pertaining to ecological and production domains were considered most important among both US and Canadian respondents.

Ecological: On average, ecological metrics were used by 23% of respondents in the Mexican survey and considered important by 52% and 58% of those in US and Canadian sample, respectively.

Production: On average, production metrics were used by 76% of respondents in Mexico and considered important by 67% and 61% of those in the United States and Canada, respectively.

Economics: On average, economic metrics were used by 51% of respondents in Mexico and considered important by 50% and 42% of those in the United States and Canada, respectively.

4.2 Other Metrics

Respondents in the US and Canadian surveys were given the option of adding measures that they thought were important to track, while in the Mexican survey only 20% of respondents indicated using quality of life measures. Among the measures provided in the United States and Canada, some that were identified across surveys related to the well-being and health of producers (e.g., work-life balance, mental health) and their environment (e.g., current acres and change in the extent of native and non-native grasslands), along with an understanding of economics beyond their operations (e.g., profitability of ranching sector), and their relative performance within it (e.g. profit per unit of area).

4.3 Implications

Ranchers, producers, and landowners are interested in using measures to learn about the success of their operations and health of their environment. Metrics associated with production are very important to producers across the three countries. However, they also expressed interest in measures that are associated with the other domains of sustainability (economics and ecological). In their suggestions for important measures, respondents supplied some that were associated with well-being and health such that they were no longer merely a bottom line or purely economic type of accounting but rather a more holistic description of their operations, environment, and community.

5 Communications and Messaging

5.1 Suggestions for Messaging

Respondents to all surveys were prompted to provide information they wanted more people to know about. Among these responses, there was a high degree of commonality related to how respondents saw themselves:

> **Experts attached to a place**: Producers wanted to be recognized as expert land managers who are tied to the places where they live. This connection creates an incentive for them to take care of these places now and for the future.
>
> **Businesspeople**: Despite landowners and producers being conservationists and having a desire to be sustainable, their operations must also be economically viable. As the margins of cow/calf operations are thin, rewarding beneficial management via payments for ecosystem services can help.
>
> **Stewards**: Cattle ranching is an asset for grasslands rather than a source of greenhouse gases or adverse ecosystem impacts. As stewards of the grasslands, ranchers provide food and conserve grasslands and should be recognized for this role.

Desire to be self-determined: Producers want local control of their land and to be supported in their role as stewards. Local control and incentives are preferred over regulations and restrictions.

5.2 Implications

For those ranchers, producers and landowners who provided suggestions for messaging, there was a focus on portraying them in a positive light. They wanted to be seen as producers providing a vital role in food production. They are embedded in their communities and environment which makes them stewards of their places. Conveying this role is important to garner support among the general public and promotes an understanding of the challenges they face. It's also important to communicate these messages to policy decision-makers who can help develop programs and enable their stewardship.

6 Conclusion

At its most general level, this trinational survey effort highlights the challenges associated with undertaking such a comprehensive effort to understand perspectives of landowners, producers, and ranchers on a continental scale. When considering the complexity of accounting for the differences between countries, the development and design of surveys becomes especially important. Any variation in the instrument or sampling methodology can greatly reduce the ability to compare the survey results or assess the comparability of the findings to the ranchers, agricultural producers, and landowners in each country.

Despite sharing similar goals, the surveys in this report diverged in their survey instruments. The use of the US survey as a starting point did not entirely translate to a reproduction of the survey in Canada and Mexico. Individual needs, variation in wording, and survey logic resulted in few questions that could be compared directly. The convenient sampling methodology, which relied on distribution through contact lists that were neither systematic or random, meant that findings were not necessarily representative of a given population, making country-to-country comparisons even more complicated. In attempting to compare these three surveys, limitations were encountered that ultimately reduced comparability of the efforts in a quantitative fashion. Future trinational social science efforts will have a higher comparison potential if they are designed concurrently from the outset with consideration of some of these challenges.

Country-level variation was significant; however, it was difficult to ascertain if this variation was due to the survey instruments or the countries themselves. In general, responses from the United States and Canada were more similar than those from Mexico. It is worth bearing in mind the unique land ownership patterns in Mexico, where communal lands (*ejidos*) are more common. The communal nature of management in these lands creates a different decision-making context and so lands where that occurs likely need to be considered separately from other types of land ownership.

Conceptually, clarifying how to think about stakeholders and engage with them throughout the Central Grasslands is important to consider. There are more stakeholders who rely on, and are

found in, the Central Grasslands than landowners and agricultural producers. Careful thought should be given to the identification of these different groups and on how to engage with them. As the survey respondents expressed, one-size-fits-all approaches to conservation are not an appropriate way to engage with ranchers, agricultural producers, and landowners. Given the likelihood that the respondents of the survey sample were less diverse in their views than the landowners, producers, and ranchers of the Central Grasslands at large, makes this especially salient. Engagement efforts that account for the diversity of all views and values across countries and Indigenous nations will be important moving forward. Some such efforts are underway in the Central Grasslands Roadmap initiative (e.g., the Indigenous Kinship Circle). The goals and objectives of engagement efforts should be considered at the outset with engagement designed using social science-based methodologies for these populations of interest.

6.1 Needs and Recommendations

Based upon the survey responses across the three countries, here are several recommendations for integration into future efforts to conserve the Central Grasslands:

Coordinated, face-to-face communications: Landowners, producers, and ranchers in all three countries preferred in-person meetings and events to gather information about programs. Thus engagement efforts at the scale of the Central Grasslands will need to be well coordinated so that activities at the local level can be integrated with larger efforts within and among countries. This coordination will need to bring the biome-level effort down from regions to states/provinces, and even community levels, for gathering and integrating local information, so both bottom-up and top-down information and approaches are included. Ideally, such engagement could involve the use of a bilingual coordinator to help design and conduct activities in a culturally appropriate way.

Social science-based information: As conservation initiatives in the Central Grasslands continue to develop, more effort should be devoted within different regions to understanding the local land management and production contexts of the ranchers, producers and landowners. Programs should seek to account for this variation in their design so that landowners and producers are enabled to steward their lands. Efforts to account for the social dimensions of conservation will require significant resources and social science expertise to ensure that samples are representative of the populations and regions of interest. Engaging with diverse communities is a key component of this engagement.

Rewarding the good: Landowners, producers, and ranchers view themselves as stewards of their lands and communities. Programs that seek to foster the conservation of the Central Grasslands should prioritize engaging with landowners in this role. In relation to programs, aligning program-based incentives to reward beneficial conservation and human well-being outcomes rather than those that restrict land management options will likely result in more interest and enrollment.

Acknowledging the good: Landowners, producers, and ranchers feel that they are fulfilling a key role in the conservation of the Central Grasslands but that this is not

always well communicated to the public and via agencies. Where appropriate, documenting and communicating these positive impacts via social and ecological metrics is an opportunity for those involved with the Central Grassland Roadmap.

6.2 Application to other efforts

Although outside of the scope of this analysis, the results from these three surveys can be used in conjunction with similar efforts to understand the landowners, producers, and ranchers within the Central Grasslands. Similar research, whether in peer-reviewed documents or technical reports, can provide additional information about some of the topics that were covered in these surveys (CEC, 2025c). Such studies are likely to be less geographically broad but can help describe some of the variation in the perspectives and preferences of landowners, producers, and ranchers across the region.

Caution is advised against using these survey results as an endpoint in engagement; instead, consider them a starting point or other data point that can be used for understanding the complex views and perspectives of ranchers, agricultural producers, and landowners who inhabit the Central Grasslands. These results are particularly useful as conservation practitioners and others seek to develop communication, outreach, and conservation delivery campaigns to encourage conservation approaches among these stakeholder groups. These surveys and this comparison effort also highlights areas for future social science-based efforts to probe more deeply a given community, region, or the themes that have emerged in these surveys.

Ultimately, these findings can continue to be integrated into the Central Grasslands Roadmap and other conservation efforts. The US survey was built upon the Central Grasslands Roadmap virtual summit of 2020, and those results were used to inform an in-person summit in 2022. At these summits, the Indigenous Working Group helped organize and ensure safe spaces and opportunities for indigenous people to connect and contribute values and voices to the meetings, including informing the themes and sessions. This working group has evolved into the Indigenous Kinship Circle, which is using surveys and voices from the group to define roles, promote authentic engagement, and develop priorities.

Landowners, producers, and ranchers across the Central Grasslands see themselves as stewards who want to be incentivized to sustainably produce. By working in an environment that is highly variable and without the benefit of resource inputs to ameliorate this variability, ranchers must be adaptive and responsive to their environment. Programs that enable such flexibility will likely be successful in attracting people to participate in such programs. Assisting landowners, producers, and ranchers with measures that document the stewardship of their lands and area can help with their decision-making and help communicate this important role to the general public. Keeping ranchers on the land can help reduce the potential for conversion of grasslands to land uses that are less resilient for people and wildlife.

Appendix A. Survey Questions

United States Survey Instrument

1. Open response. **In what local, regional, tribal, or state programs are you enrolled?** (examples include Audubon's Conservation Ranching, The Nature Conservancy's Sustainable Grazing Land Program, an easement of some form, a local landowner collaborative grant, or many others).

2. Yes/No with logic. **Are you interested in learning more about any of these programs?** Yes See Q3; No–See Q4

3. Select the best option. **What's your preferred method for learning more?**

4. Open response. **Why are you not interested in these programs?**

5. Matrix rating scale with option to comment. **Overall, on a scale of 1, "programs do not work at all," to 4, "programs work incredibly well," how effective overall do you think the following parts of local, regional, state and federal programs are at supporting range improvement, soil health, and/or water conservation activities?**

6. Yes/No with logic. **Are you enrolled in the Conservation Reserve Program?** Yes – See Q7, No–See Q8

7. Select the best option with option to comment. **Is your land eligible for re-enrollment?**

8. Yes/No with option to comment. **Would you like to enroll in the future?**

9. Select all that apply with option to comment. **In terms of understanding the success of cattle production and the health of the grasslands, what measurements are important to you to track?**

10. Open response. **What other ideas would you recommend for programs that support range improvement, cattle production, soil health, and/or water conservation?**

11. Open response. **What are the most important pieces of information you want more people and leaders to know about your livelihoods and about your communities?**

Canada Survey Instrument

1. Select the best option. **In what province is your agricultural operation?**

2. Select the best option. **How many cattle do you have in your operation?**

3. Yes/No. **Have you noticed less grassland areas where you live over the last 10 years?**

4. Open response, shown if answered Yes to Q3. **What do you think is the cause of this loss?**

5. Select the best option. **Are you concerned about the loss of grasslands in Canada?**

6. Yes/No. **Are you enrolled in any local, regional, Indigenous, or provincial environmental or conservation programs?**

7. Multiple selection, shown if answered Yes to Q6. What is the name of the program(s)?

8. Multipart Question, shown if answered Yes to Q6.
   - Part 1: Select the best option. **When your current program ends, is your land eligible for re-enrollment?**
   - Part 2: Open answer, shown if answered No or Yes, with barriers in part 1. **Please describe why.**

9. Multipart Question, shown if answered No to Q6.
   - Part 1: Yes/No. **Would you like to enroll in the future?**
   - Part 2: Open answer, shown if answered No to Part 1. **If no, why?**

10. Open response, shown if answered No to Q6. **Please describe what your ideal program would look like.**

11. Yes/No. **Are you interested in learning more about environmental or conservation programs for your operation?**

12. Multiple selection, shown if answered Yes to Q11. **What is your preferred method for learning more?**

13. Open response, shown if answered no to Q11. **Why are you not interested in these programs?**

14. Matrix rating scale with option to comment. **Overall, on a scale of 1, "programs do not work at all," to 4, "programs work incredibly well," how effective overall do you think the following parts of local, regional, provincial and federal programs are at supporting range improvement, soil health, and/or water conservation activities?**

15. Multiple selection. **In terms of understanding the success of cattle production and the health of the grasslands, what measurements are important to you to track?**

16. Open response. **What other ideas would you recommend for programs that support range improvement, cattle production, soil health, and/or water conservation?**

17. Open response. **What are the most important pieces of information you want more people and leaders to know about your livelihoods and about your communities?**

18. Open response. **What year were you born?**

19. Select the best option. **What is your gender?**

Mexico Survey Instrument

SURVEY OF RANCHERS IN THE GRASSLANDS OF THE CHIHUAHUAN DESERT

The Commission for Environmental Cooperation (CEC) seeks to know the management and conservation actions of North American grasslands and support conservation actions of this valuable ecosystem. We invite you to answer the following survey, we want to know the opinion of ranchers and local owners belonging to the region of the grasslands of the Chihuahuan Desert in Mexico.

Thanks to your support we will be able to better identify your needs and those of your pastures!

1. **Regarding your cattle farms, select the option that best represents you**:
   a. [ ] I am a private owner
   b. [ ] I am an ejidatario or owner of communal land
   c. [ ] I am an ejidatario and I also have a small property
2. **In what state(s) are your cattle farms located?** You can select more than one option
   a. [ ] Nuevo Leon
   b. [ ] Coahuila
   c. [ ] Zacatecas
   d. [ ] Chihuahua
   e. [ ] Durango
   f. [ ] Queretaro
   g. [ ] San Luis Potosi
   h. [ ] Guanajuato
3. **What activities do you use most often to inform yourself and learn about rangeland management and your livestock activities?** (select only three answers)
   a. [ ] Face-to-face workshop or training
   b. [ ] Virtual workshop or training
   c. [ ] Printed brochures and magazines
   d. [ ] Electronic newsletter (via e-mail)
   e. [ ] WhatsApp Groups
   f. [ ] Facebook Groups
   g. [ ] Own comments
   h. [ ] Talk with other farmers
   i. [ ] Search for information on the internet
   j. Other:_____

4. **Which of the following forms of measurement do you most frequently use to evaluate the success of your livestock production?**
   a. [ ] Environmental measurements (e.g. biodiversity inventories, carbon capture, soil and rangeland improvement)
   b. [ ] Economic measures (profit, income-expenses, balance sheet)
   c. [ ] Production measurements (e.g. pregnancy percentage, calving percentage, weaning percentage, mortality)

d. [ ] Measurement of quality of life (for example, social benefits for your family and workers, improvement or acquisition of basic services such as electricity, electricity, drinking water)

PRODUCTION SUPPORT PROGRAMMES

5. **Are your farms registered or participating in production support programs, either governmental or private?**
If your answer is yes, skip to question 7
If your answer is no, skip to question 6 and then continue to question 8.
a. [ ] Yes
b. [ ] No

6. **Are you interested in receiving information about this type of program?**
a. [ ] Yes
b. [ ] No

7. **From the following options (a-d) choose the production support programs in which your property is registered and rate each of the aspects indicated** (1 = very bad, 2 = bad, 3 = fair, 4 = good, 5 = very good)
a) **Federal government program** (e.g., SADER, CONAZA, Welfare).
[ ] Ease of entry or enrollment
[ ] Technical assistance
[ ] Counterparts and/or co-investment
[ ] Duration of the partnership agreement
[ ] Flexibility of programs in particular situations
[ ] Distribution and/or application of payments
[ ] Evaluation of results and follow-up
[ ] Benefits and improvements to your pastures
b) **State program** (e.g. Ministry of Agriculture and Livestock, Agricultural Development).
c) **Municipal program** (e.g. Municipal Rural Development).
d) **Private program for sustainable production** (for example, Grassland Program of Pronatura Noreste A.C; Sustainable Grazing Network of the Bird Conservancy of the Rockies).

8. **What failures and problems have you experienced with the production support programs in which your livestock farm is registered?** Tell us about your experience.

9. **What would you recommend to improve the operation and results of the production support programs in which your livestock farm is registered?**

GRASSLAND CONSERVATION PROGRAMS

10. **Does your livestock farms have any environmental protection and/or conservation schemes?** (For example, state, federal or municipal ANP, voluntary area, UMA, conservation contract, or other).
If your answer is yes, skip to question 12
If your answer is no, skip to question 11 and then continue to question 13.

a. [ ] Yes
b. [ ] No

11. **Are you interested in your cattle farms having a scheme for the protection and conservation of your pastures?**
a. [ ] Yes
b. [ ] No
c. [ ] I need more information.

12. **Select the environmental protection and/or grassland conservation program that your cattle ranches have** (a-f). If this is the case, you can select several options. **Rate each of the aspects that are pointed out.**
a. [ ] **Protected natural area** (federal, state or municipal)
Rate each of the aspects indicated: 1=very bad, 2=bad, 3=fair, 4=good, 5=very good.
[ ] Ease of entry and socialization of program and project information
[ ] Technical assistance
[ ] Counterparts and/or co-investment
[ ] Duration of the partnership agreement
[ ] Flexibility of programs in particular situations
[ ] Distribution and/or application of payments
[ ] Evaluation of results and follow-up
[ ] Benefits and improvements to your pastures
b. [ ] **Area voluntarily designated for conservation**
c. [ ] **Private conservation contract** (e.g., Pronatura Noreste, Bird Conservancy of the Rockies)
d. [ ] **Wildlife Management Unit** (UMA)
e. [ ] **Payment for environmental services** (CONAFOR)
f. [ ] **Community territorial planning**

13. **Specify Another type of environmental protection and/or conservation scheme or program that your livestock farms have if it is not in the previous options.**

14. **What motivates you to participate or register in the environmental protection and/or grassland conservation program in which your cattle farm is registered?** Tell us about your experience.

15. **What failures and problems have you experienced with the support programs in which your property is enrolled?** Tell us about your experience.

16. **Select the three main characteristics that a grassland conservation and protection program should offer to be of interest to you**:
[ ] Financial support through subsidy.
[ ] Financial support through impact investing.
[ ] Financial support through co-investments.
[ ] Financial support through credits.
[ ] Technical assistance to improve production practices.
[ ] Support for marketing and access to fair markets.
[ ] Business, financial and organizational training.

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