

Summary of 2006 Great Sand Hills Progress Report for GSH Web site

Introduction

The Scientific Advisory Committee for the Great Sand Hills Regional Environmental Study has submitted its second interim report on progress made in conducting the Regional Environmental Study for the Great Sand Hills region. This is the final interim report before a final report and recommendations to the Minister of Saskatchewan Environment.

The report provides information on progress made since 2005 with particular emphasis on the 2006 summer field season regarding the natural capital, and social and economic components of the study. The following sections provide a summary of the key topics that the Scientific Advisory Committee has dealt with during the 2006 summer field season.

Natural Capital

The natural capital studies have focused on a number of areas including bird and plant surveys, soil acidification studies and rangeland assessments during the past field season. During this time, work continued on the development of focal species models, the climate change model and the gathering of additional information on gas reserves, gas development technology and water resources.

Bird Surveys

During the 2006 field season, surveys of grassland bird communities were undertaken to study the effects of human disturbance (gas wells, roads and grazing) on these bird communities. The study team designed a stratified survey, sampling some 240 sites in four types of grasslands with varying degrees of human disturbance. At each sampling point, skilled observers recorded observations of grassland birds in or near the 100-meter sampling site over a five-minute period. In addition, observations of species of concern were recorded whenever and wherever they were heard or seen in the review area.



All surveys were completed by July 2006 and the data is being used to inform the researchers about the effect of human disturbance on the grassland bird communities. This data is also being used in the development of models of possible future land use and conservation scenarios for the Great Sand Hills area particularly in the context of identification of habitat important for conservation purposes.

Plant Surveys

During the period of April 28, 2006 to August 31, 2006 a rare plant survey and native grassland health assessment was conducted for the study area. The same 240 sites that were randomly stratified for the bird surveys were used to assess the range health and collect information about the rare plants in a 50-meter radius at these sites.



The plant surveys were completed by August 2006. The data is being used to examine the effect of human disturbance on plant communities, model the importance of different grassland types for focal species habitat and to develop impact assessments of future scenarios. The data is also being used as part of a larger landscape analysis whereby areas of important habitat for future conservation can be identified.

Natural Gas Technology and Practices

The Scientific Advisory Committee and researchers continued their investigations into gas development technology and practices in regards to exploration and development of the gas fields in the study area. Information was gathered on current and best management practices for activities like road access, drilling, pipelining, servicing of wells and reclamation of decommissioned wells and roads. The Scientific Advisory Committee investigated provincial regulations and guidelines applicable to surface disturbance resulting from gas exploration and development. A review of directional and slant drilling was conducted in the Great Sand Hills study area, including identification of wells and interviews with well operators and design consultants.

The final report for this component of the study was produced August 31, 2006 and provides an overview of upstream gas development activities from exploration to reclamation and provides a discussion on best management practices. This information is being used in the impact assessment phase of the study and in the development of future land use scenarios.



Natural Gas Reserves and Future Development

In addition to the information received on gas development activities, the committee investigated natural gas reserves and sought expert opinion on potential future development of the gas reserves underlying the Great Sand Hills.

The reservoir engineers contracted to do this work provided gas reserve estimates for the Milk River and Second White Specks formations, the likelihood of these reserves being developed and a recommended well spacing and provided a possible time frame for development. Additionally, the committee investigated the various regulations, policies and procedures guiding gas development in the Great Sand Hills. The information gained from this study is being used to consider a variety of issues in relation to gas development in the scenario development phase of the study.

Soils and Acid Deposition

A study to look at the relative sensitivity and critical loads of acid deposition on soils in the Great Sand Hills was undertaken in May 2006. The study assessed the short and long term impacts of acid rain on the soils of the study area by: establishing benchmark sites; rating soils of the region for their sensitivity to acidic deposition; and using empirical methods for calculating specific critical loads of acidic deposition. The final results were submitted by November 2006.

This study provides an indication of the soil's vulnerability to acidification and the potential impact on future vegetation communities. The information is being used in predicting future sustainability scenarios.

Shallow Buried Pasture Pipelines

A literature review and interviews with persons familiar with the installation and management of shallow buried water pipelines was conducted to provide additional information about these installations and the potential impact on native vegetation. A report was produced in October 2006 providing an overview of the details of the pipeline workings, agricultural and environmental benefits and drawbacks, potential extent of watering point development, and expected uptake by private producers in the Great Sand Hills study area.

The information provided by this study is assisting the Scientific Advisory Committee with the preferred and future development scenarios for the study area. This information is also assisting in predicting potential future disturbances and impacts on vegetation communities, particularly in areas where conservation areas may be identified.

Economic Capital

Much of the work over the past summer in the area of economic capital has been in the development of an economic model. The economic baseline assessment employed a traditional statistical review of both past and current economic conditions. A literature review was also undertaken to gain insight into the nature of human responses, both

culturally and economically to changes in the economic landscape of the Great Sand Hills region.

The final report of the economic study is currently under review. The information derived from the model will inform the Scientific Advisory Committee about past and current economic trends in the region and assist in providing economic considerations for the preferred and future scenario development.

Social Capital

During the summer field season of 2006, the social capital baseline assessments focused on interpretation and summary of information gathered from telephone surveys regarding the local residents attitudes toward the impacts of regional economic activities. Other social baseline assessments were gathered regarding First Nations use and culture and key stakeholder insights through participatory geographic information system sessions.

Local Residents' Attitudes toward the Impacts of Regional Economic Activities

In April and May 2006 local residents were invited to participate in a telephone survey of between 20 and 30 minutes duration to provide their views on the impacts of regional economic activities. The survey team conducted interviews with 432 adults in the Great Sand Hills region using a computer-aided telephone interviewing system.

Information from this survey provides the Scientific Advisory Committee with valuable information about local residents' attitudes toward economic development activities in the Great Sand Hills region including the impacts of ranching, ecotourism and gas development, the three major sources of economic activity in the area. The survey also asked respondents about possible overlapping impacts from the three economic activities listed.

The information gained from this survey, as well as earlier surveys conducted by the social capital researchers, will be used as the "social filter" for future scenario development.

First Nations Use and Culture

Much of the First Nations use and culture study continued to focus on information gathered from the Treaty #4 people. With the active participation and cooperation of the File Hills Qu'Appelle Tribal Council, the researchers for the Great Sand Hills study have been able to interview elders from the diverse linguistic groups of the Treaty #4 people and gather some very important



information about the historic and current use by First Nations. They also learned of First Nations' desired future uses of the area.

In addition to the Treaty #4 interviews, the researchers also received information from Treaty # 6 and Treaty #7 First Nations, notably the Blood Tribe of the Blackfoot Confederacy.

The information from these interviews is being used to inform the final scenario and future scenarios particularly regarding First Nations use and future desires in the Great Sand Hills area.

Participatory Geographic Information System Sessions

During the latter part of August and early September 2006 the study team held sessions involving key stakeholders in which they were invited to provide information about what they perceived were the issues facing the Great Sand Hills region. In addition, these sessions asked participants to outline their views on what future landscapes would look like in the Great Sand Hills. This information is being used to filter the preferred and final scenarios, to understand how scenarios align with stakeholder aspirations for the area.

Future Activities for the Regional Environmental Study

The Scientific Advisory Committee continues to work diligently in summarizing the work conducted during the study leading to a recommended preferred scenario for sustainable development in the Great Sand Hills study area. The committee's work in the short term involves not only scenario development, but also drafting the final report. The final report is to be delivered to the Minister of Environment by the end of March 2007.

After completion of the study and its review by the Minister, it is expected that the final report and all of the individual study reports (exclusive of proprietary/protected information) summarized in the 2005 and 2006 progress reports will be made available to the public. The information contained in these reports along with the final report and recommendations will assist the Government of Saskatchewan in establishing sustainable development, as well as conservation, objectives for the Great Sand Hills, as part of Saskatchewan's Green and Prosperous Economy.