

MULTIPLE LAND USE MANAGEMENT: CASE STUDIES ON BUILDING PARTNERSHIPS

Greg Riemer¹ and Tom Harrison²

¹ Manager, Agricultural Services, Saskatchewan Wetland Conservation Corporation, Saskatchewan, Canada

² Range Management Specialist, Saskatchewan, Canada

ABSTRACT

As part of the Saskatchewan commitment to the North American Waterfowl Management Plan the Saskatchewan Wetland Conservation Corporation (SWCC) is acquiring over 30,000 acres of native vegetation in a contiguous block around the Big Quill Lake in east central Saskatchewan. Some of this range land was in extremely poor condition. This lake is of internationally significant importance to waterfowl, nesting and migrating shorebirds. SWCC goals for this area are to improve the condition and vigour of the range for livestock and to provide and protect habitat for wildlife such as Baird's sparrow and piping plovers. Big Quill Lake is a shallow, saline lake whose waters and mud flats cover approximately 90 square miles. It is a major migratory stopover for shorebirds having recently been dedicated as a Western Hemisphere Shorebird Reserve Network (WHSRN) site. Prior to SWCC involvement, approximately half of the 30,000 acres was accessible to cattle for seasonlong grazing whereas the other half was vacant but had received some grazing in the past from unauthorized free-ranging cattle. A history of land use was obtained, a range evaluation performed and management plans were developed and implemented. An extensive inventory of the range and its condition was done to develop multiple use management plans. These plans recommended cattle access be removed from approximately 20 miles of shoreline and 7,000 acres with vulnerable forage resources. Water development and fence construction on 84,000 acres on four separate pastures will allow the implementation of deferred and rest-rotation grazing systems. Grazing will be deferred on another 870 acres of riparian habitat. Improved cattle distribution and better utilization of forage resources should allow local livestock producers to maintain a similar number of cattle now as in the past and improve vegetative cover for grassland-nesting birds. The catalyst for this work and the many partnerships that were developed through it was the United States' North American Wetland Conservation Act (NAWCA), which funds 75% of the North American Waterfowl Management Plan. The initial contributors included the states of Tennessee, Kansas, Nebraska and Wyoming as well as the Nature Conservancy and Wildlife Habitat Canada. Local partners included the Canadian Wildlife Service (CWS) PFRA, Ducks Unlimited, Sask Power, local landowners and grazing cooperatives. SWCC has begun preliminary work on the Chaplin Lake complex. Like Big Quill, shorelines provide prime nesting habitat for the piping plover, an endangered species. Both places are also within the range of Baird's sparrow, a threatened species known to prefer lightly or ungrazed native grasslands. During the peak of the migration in late May Chaplin Lake is a stopover for one half of the entire population of Sanderlings. Chaplin Lake is mined for sodium sulphate and its brine shrimp. Its lunar appearance is misleading as Chaplin Lake is rich in tourism opportunities for bird watching and other natural area interpretation. An Ecotourism study was initiated with the assistance of Gold Corp. and the PFRA's Partnership on Agriculture and Rural Development (PARD). Range evaluation and grazing system designs have been done with the financial assistance of the NAWMP and CWS. Shorebird studies have begun to quantify numbers and species for the lake's WHSRN dedication. This paper will review the rationale, evaluation, planning and partnership building required to implement both projects.

BACKGROUND

The corporate mission of the Saskatchewan Wetland Conservation Corporation (SWCC) is to lead and coordinate the province's wetland conservation initiatives to ensure the sustainability and biodiversity of the prairie environment for people and wildlife. The SWCC was created on January 10, 1990 to, among other things, coordinate provincial activities on behalf of Saskatchewan North American Waterfowl Management Plan (NAWMP) partners. The NAWMP, a continental partnership among Canada, the United States and Mexico, seeks to restore waterfowl and other wetland-dependent wildlife populations through sound land-use programs that contribute to soil, water and wildlife conservation. Within this context, SWCC is making a significant contribution to achieving objectives of Saskatchewan's Environmental Strategy by maintaining and improving biological diversity, soil conservation, and water quality and quantity. By protecting the province's wetlands and associated uplands and encouraging wildlife-friendly agricultural practices, the corporation is making impressive strides toward achieving its NAWMP objectives. This is being accomplished through innovative partnerships at local, regional and international levels.

SWCC is guided by a Board of Directors with representation from provincial and national organizations that affect land use in the province. Board membership spans both private and public organizations in the agricultural, wildlife and environmental sectors. This mix brings diversity and broad insight into the activities of the corporation. SWCC represents a partnership of provincial and national wildlife habitat conservation and land-use agencies. Through this partnership, the corporation uses an integrated land-use approach by linking agricultural and wildlife interests to NAWMP programming in Saskatchewan. In the past years the NAWMP and corporation have used an ecosystem approach to improve wildlife habitat in general, and waterfowl, shorebird and grassland songbird habitat in particular. What is good for the ecosystem is good for waterfowl. The net result will be an umbrella of protection for wildlife that rely on wetlands, uplands and the enhancement of a resource which greatly benefits our province's agricultural and wildlife-related industries.

MANAGEMENT OBJECTIVES

The land use goals of the Saskatchewan Wetland Conservation Corporation are to:

- i) preserve habitat for nesting and migrating shorebirds,
- ii) preserve habitat for grassland birds, such as the Baird's sparrow and western meadow lark,
- iii) improve range condition and pasture production for local cattle producers, and
- iv) enhance the overall resource to improve its potential for tourism to stimulate local economies.

MULTIPLE USE MANAGEMENT AT BIG QUILL LAKE Rationale for Land Acquisition and Improvement

The land in the Quill Lakes region was initially surveyed in the 1890's.

At that time the lake was much larger and the surveys stopped at the existing shoreline. In subsequent decades the lake level dropped never to fully recover. This created over 30,000 acres of unsurveyed land, in essence a "no man's land". Approximately 40 years ago permanent vegetation had become established and grazing had started under the auspices of the provincial land department. The grassland resource is based on a saline soil substrate and years of poor grazing management had resulted in range condition scores in the poor to fair range with large variations in animal use. The rangeland around the lake was also in poor condition for wildlife habitat and required reclamation. Unrestricted cattle access to the shoreline was a major concern if the area was to be effectively managed for the endangered piping plover. Prior to the signing of the NAWMP a pilot project was set up by the major partners of the still unnamed NAWMP to look at broadly based landscape management to aid waterfowl nesting. Waterfowl biologists had earlier determined that the critical element limiting waterfowl populations was loss of upland nesting cover, which throughout most of the prairies was being converted to annual crop land. The place chosen for the original pilot project was the Quill Lakes area. Its landscape contains a large saline lake, a large freshwater lake and thousands of small wetlands. While adversely impacted by cultivation and overgrazing Big Quill was a very important staging area and migration stop for approximately a half million geese and cranes (with one day counts in October 1993 in excess of 300,000 geese), 150,000 arctic shorebirds and a small number of whooping cranes. The saline shoreline of Big Quill lake is the nesting habitat of 300, or 5%, of the world's remaining population of piping plovers. The grassland complexes around the Quill lakes are important to many ground nesting shorebirds including the Baird's sparrow which is considered threatened. In the 1980's the RAMSAR Convention designated the Quill Lakes as one of only a few wetland complexes of world significance. Recently in cooperation with the Canadian Wildlife Service of Environment Canada and Saskatchewan Environment and Resource Management, SWCC nominated the Quill Lakes as a Western Hemisphere Shorebird Reserve Network site. This designation has provided international recognition of the value of this site for migrating birds, as well as increased opportunities for development of the province's ecotourism industry.

RANGE ASSESSMENT AND MANAGEMENT PLANS

A range assessment (Abouguendia 1990; Wroe et al., 1988) was performed on approximately 32,000 acres adjacent to Big Quill Lake. The area is located in the black soil zone and for the most part was classified as a saline lowland range site. Range condition ranged from poor to low good with the dominant plant species of the area being northern reed grass (*Calamagrostis inexpansa*), slender wheatgrass (*Agropyron trachycaulum*), saltgrass (*Distichlis stricta*), foxtail barley (*Hordeum jubatum*), Nuttall alkali grass (*Puccinella nuttalliana*), bluegrasses (*Poa* spp.), many-flowered aster (*Aster* spp.), sowthistle (*Sonchus* spp.), gumweed (*Grindelia squarrosa*), goldenrods (*Solidago* spp.) and red samphire (*Salicornia rubra*). In many areas, cattle had access to shorelines, beaches and mud flats with poor vegetative cover and uneven cattle distribution resulted in increased grazing pressure along a major creek flowing into Big Quill Lake, near water sources and along higher ridges. The saline environment also appeared to be responsible for patchy vegetative cover in several locations. Management plans (see pasture plans for Wimmer Grazing Co-op, Lampard Grazing Co-op, Berlinic and Pruden Pastures) recommended stocking rates ranging from 0.24 to 0.44 Animal Unit Months per acre and employed fencing and water development to: i) eliminate grazing on 16 miles of shoreline and 12,000 acres of mud flats and beaches; ii) eliminate grazing on 7000 acres of vacant lands with patchy vegetation; iii) allow the

implementation of rest-rotational and deferred grazing systems on 8400 acres; and iv) defer grazing on 870 acres of riparian habitat. Two reports, 'Range Evaluation and Grazing Management Plans for Leased Pastures in the Big Quill Area' and 'Range Evaluation and Grazing Feasibility for Vacant Lands in the Big Quill Lake Area' were written by Sweet Grass Range Consulting. Both reports are currently available from the Saskatchewan Wetland Conservation Corporation.

PARTNERSHIPS

Changes made to *The Wildlife Habitat Protection Act* and new regulations added to both it and *The Provincial Lands Act* in 1993-94 permitted the transfer of crown land from the Saskatchewan Department of Agriculture and Food (SDAF) to the SWCC. These wetlands and adjacent uplands will help meet provincial commitments to the NAWMP. Under the terms of Saskatchewan's agreement to join the NAWMP, SDAF is providing half of the province's commitment to the plan as crown land. The implementation of the grazing plans required the consent of the pasture lessees as they surrender lease with the Saskatchewan Department of Agriculture and Food and sign a new lease with SWCC. To acquire this land SWCC had to have it surveyed. Arrangements were made with the Department of Justice to survey the parcel in large continuous blocks and not in the familiar British mile square sections comprising 160 acre quarter sections. This arrangement will create a contiguous block of land with restricted access as there are no road allowances. Transfer on the first holding, a 3758 acre parcel at the north end of Big Quill Lake was completed in the winter of 1994. This transfer was the first of almost 20,000 acres of vacant land and 12,400 acres of leased pastures. To construct the pasture improvements SWCC utilized funding from the Canadian Wildlife Service of Environment Canada under its workplan for the NAWMP. Additional funding to improve the Dafoe pasture and evaluate and acquire large tracts of vacant land was obtained for the PRAIRIE SHORES program which is delivered by SWCC through NAWMP funding. The PFRA was looking for a demonstration of managed grazing of riparian systems and funded the riparian development of the Wimmer Grazing Co-op. Ducks Unlimited Canada had some of its program delivery money earmarked for endangered species work and generously consented to fund the construction of seven miles of shoreline fencing to exclude cattle from the piping plover nesting areas. The improvement of pastures required fencing and rotational grazing systems to better utilize the grass resource. This required extensive improvements to the cattle watering systems. Water had to be piped from existing scarce dugouts as far as 2 miles. Sask Power entered into an agreement with SWCC to provide solar powered pumping units for seven of the sites that did not have access to the power grid. The benefits are numerous as power poles and overhead lines are not required in a major staging area, the rangelands were not impacted by heavy equipment and an alternative power source is demonstrated. These systems are now up and running and in several cases providing ample water for well over 200 head of cattle. Sask Power's involvement was motivated by their vision for environmentally friendly electrification of a world class resource. For its substantial contribution Sask Power received permanent recognition on large information highway signage, signage at habitat access points and where the solar units were located and in tourism brochures for the Quill lakes. Two land acquisitions helped consolidate wildlife habitat around Big Quill Lake. The Saskatchewan Wildlife Federation made a gift of 480 acres to SWCC, and the corporation purchased one-quarter section of key habitat along the south shore with the financial assistance obtained from its Habitat Diversity Program.

CHAPLIN LAKES HABITAT ENHANCEMENT AND ECOTOURISM DEVELOPMENT

Goal: The long-term goal at Chaplin Lake is to provide and protect shoreline habitat for migratory shorebirds. This development process has created opportunities for a major ecotourism business in Saskatchewan as well as the village of Chaplin. Of key importance here is the securement of shoreline areas for nesting piping plovers and migrating shorebirds and improvement of surrounding rangelands for ground nesting birds. This project will sustain and enhance the rangeland based livestock industry, provide local jobs, help diversify the economy and provide residents the opportunity to establish a new sustainable tourism product.

Rationale For Land Acquisition and Improvement: Chaplin Lake is a large saline lake between Moose Jaw and Swift Current right along the Number 1 highway. Prior to its development it was dry most of the time and of little value to wildlife or to the people of the area. Its reclamation for agriculture would have been prohibitively expensive and the results of such reclamation work have had low success. What we now have at Chaplin Lake is the utilization of a saline ecosystem to its highest and best use. With the involvement and financial support of Ducks Unlimited and Sask Water, water has been diverted to the lake to create a large freshwater marsh at the south east end of the lake and provide water to the north end of the lake which is easily visible from the Number 1 highway. This water is utilized by Gold Corp. to "brine" the lake to enable the mining of sodium sulphate. The mining process has had some very unexpected and beneficial results. The large shallow cells in the lake are the very best possible way to encourage the growth of brine shrimp and other invertebrates. Like Big Quill, these saline conditions are perfect feeding sites for arctic nesting shorebirds. The mining operations have created an almost consistently perfect migratory stopover for shorebirds. The lake has probably been used by shorebirds since time began but only in those infrequent years when there was enough runoff to fill it. Shorebird surveys conducted by the SWCC resulted in a count of 67,000 birds of varying species using the area in a single day. Fifty thousand Sanderlings were counted which represents up to 50% of their hemispheric population. The endangered piping plover also uses the shoreline for nesting and raising their young.

PARTNERSHIPS

Through the efforts of SWCC and the CWS, Chaplin Lake will be designated a "Hemispheric" Western Hemisphere Shorebird Reserve Network site in May of 1996. This is the highest designation possible. SWCC and Nature Saskatchewan using seed money from Gold Corp. received approval November 23, 1994 to develop a marketing/development strategy for Chaplin Lake under the Canada-Saskatchewan Partnership Agreement on Rural Development (PARD). This strategy followed SWCC's involvement in the Provincial Ecotourism Study which was cost shared with Saskatchewan Economic Development. Red Pel Corporation, a Saskatchewan ecotourism consulting firm, was contracted to undertake the study and have it completed by July of 1995. The study listed a number of developments that are required for the project; identified key nature viewing sites; outlined a marketing and promotion plan; and made recommendations as to how local residents could develop the area. SWCC continues to expand partnerships to include local and provincial tourism development and marketing interests. SWCC, utilizing CWS and PRAIRIE SHORES funding, has undertaken range evaluation, and planning of the pastures surrounding Chaplin Lake. The corporation's objectives are the same as that at Big Quill Lake, to design and implement multiple use grazing systems that enhance the rangelands around the lake for both livestock and wildlife. Working with Gold Corp. and Sask Water,

SWCC hopes to ensure that sufficient water is available to ensure adequate foodstocks are there for the huge number of shorebirds that arrive in the spring.

EXPECTED BENEFITS

Once management plans have been fully implemented and the systems are operational, several benefits are anticipated.

1. There should be an improvement in the range condition and vegetative cover resulting from improved grazing management.
2. There will be a reduction in conflict between cattle and nesting shorebirds, in particular, on the beaches where the piping plovers nest.
3. Improved range condition and better cover should improve nesting habitat for grassland nesting birds.
4. There will be large areas adjacent to pastures that will be set aside for wildlife only. In addition, a portion of the paddocks within the pastures will not be grazed until the nesting season is over and at least one paddock per pasture will not be grazed each year.
5. There will be a sustainable supply of forage for cattle for local livestock producers.
6. Opportunities will be created for development of an ecotourism service industry.

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- the Canadian Wildlife Service through workplan funding of SWCC's land programs,
- the NAWCA through its funding of the PRAIRIE SHORES Project,
- PARD and Gold Corp. for their funding of the Chaplin ecotourism development and marketing study,
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