

Manitoba from the Air

A Geographical Interpretation

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Figure 1.1.a

1947 Photo



Figure 1.1.a

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Image metadata

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1. The Little Saskatchewan River flows
 2. Highway 459
 3. Indirect meandering course of the Assiniboine River
 4. Assiniboine River
 5. Previous route of Little Saskatchewan
 6. Previous route of Little Saskatchewan
 7. Dam across the Little Saskatchewan
 8. Reservoir to the north of the dam.

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& John Everitt
Department of Geography
Brandon University

PCAG '07

➤ Background

- Extensive collection of aerial photography

➤ Aims/Goals

- To complement “The Geography of Manitoba: Its Land and Its People”

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13	Mining and Oil Extraction	14
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15	Industry/Manufacturing	13
16	Water Resources	68
17	Parks, Recreation, Sports	30
18	Transport and Communications (Past and Present)	61
19	Legal Issues and Law Enforcement	15
	TOTAL	559

➤ Imagery

- Types of Image
- Sources of Images
- Scale Variations
- Date Variations

➤ Interpretation Procedure

- Tone (Colour)
- Texture
- Pattern
- Shape/Shadow
- Size
- Location/Association

➤ Limitations/Problems

- Locating old photos
- Copyright
- Metadata
- Stereovision

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Chapter 1: Introduction

Introduction

Remote Sensing and Air Photo Interpretation

This collection aims to show the geography of Manitoba using remote sensing, a process that involves obtaining information about the earth's surface without coming into contact with it. A range of instruments can sense much of the electromagnetic spectrum, whereas the human eye can sense only a narrow band of wavelengths from 0.4 to 0.7 micrometres the so-called visible part of the spectrum. Instruments have been designed to record not only the visible part of the spectrum but also longer and shorter wavelengths. Most people are now familiar with at least air photographs, obtained using cameras, and with radar images. Radar has the advantage of not requiring light to operate and some radar wavelengths can penetrate clouds. Many Manitobans are familiar with the spectacular radar images of the Red River Plain obtained during the height of the 1997 "flood of the century."

In remote sensing the remoteness of the sensor can vary enormously. Photographs can be taken from a few meters above the ground using a camera mounted on a "cherry picker" but most air photographs are taken from planes flying between 5000 and 30,000 feet¹ above sea level.

Photographs and other forms of images are obtained from satellites at heights up to thousands of kilometers. Despite the development of many new remote-sensing techniques, air photographs are still the best known and, for the non-expert, the most easily interpreted of all images; consequently, most images in this collection are air photographs.

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1.1: Sequential Photos of the Junction of the Assiniboine and Little Saskatchewan Rivers

Sequential air photos (taken of the same area at different times) reveal changes that have occurred over time. Many geomorphological processes are so slow that no change can be detected even by comparing very old photos with recent ones (the time span is after all little more than 100 years). However, prairie streams flowing across easily eroded sediments assume a meandering form, the position of the meanders changing relatively quickly.

Figure 1.1.a: 1947 Photo



The Little Saskatchewan River (1) flows southward onto the floor of the Assiniboine spillway, bounded roughly by highway 459 (2). From that point south, it assumes an indirect meandering course (3) to the Assiniboine River (4). Several previous routes can be seen both west (3) and east (6) of the present course. Note also the dam (7) across the Little Saskatchewan River with a reservoir (8) to the north. This was the location of the first hydro-

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Figure 1.1.a

1947 Photo



Figure 1.1.a

Show Trace

Image metadata

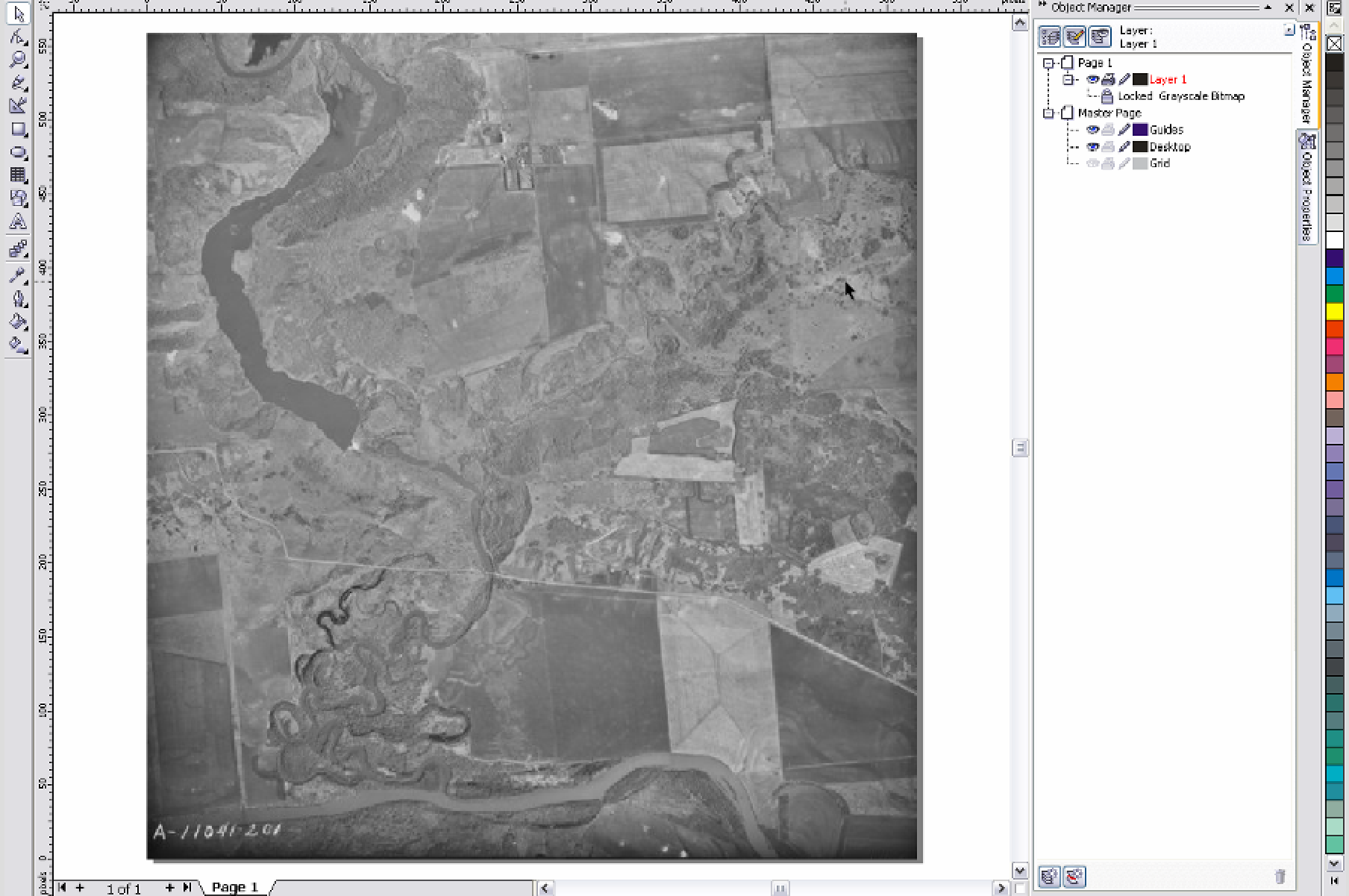
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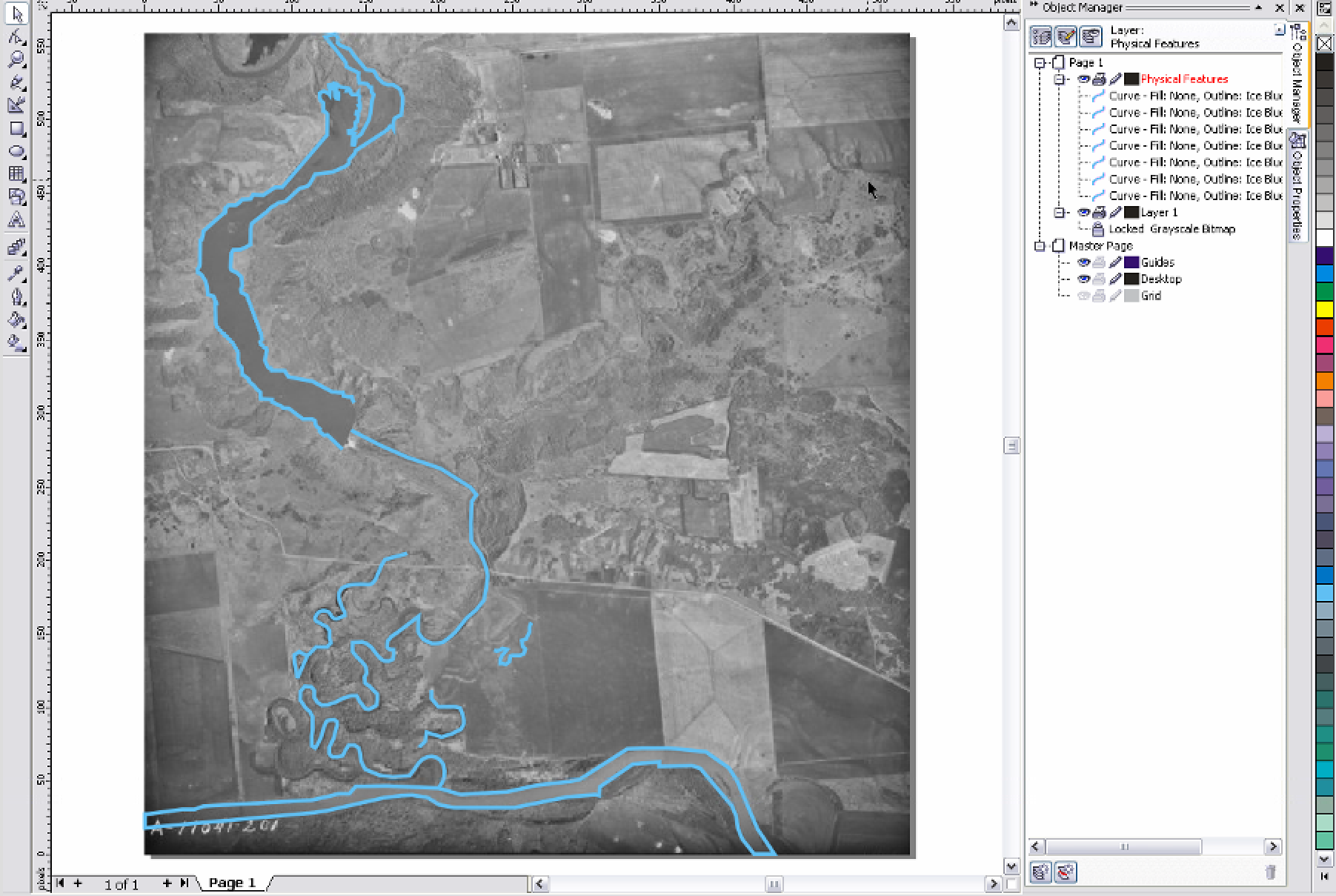
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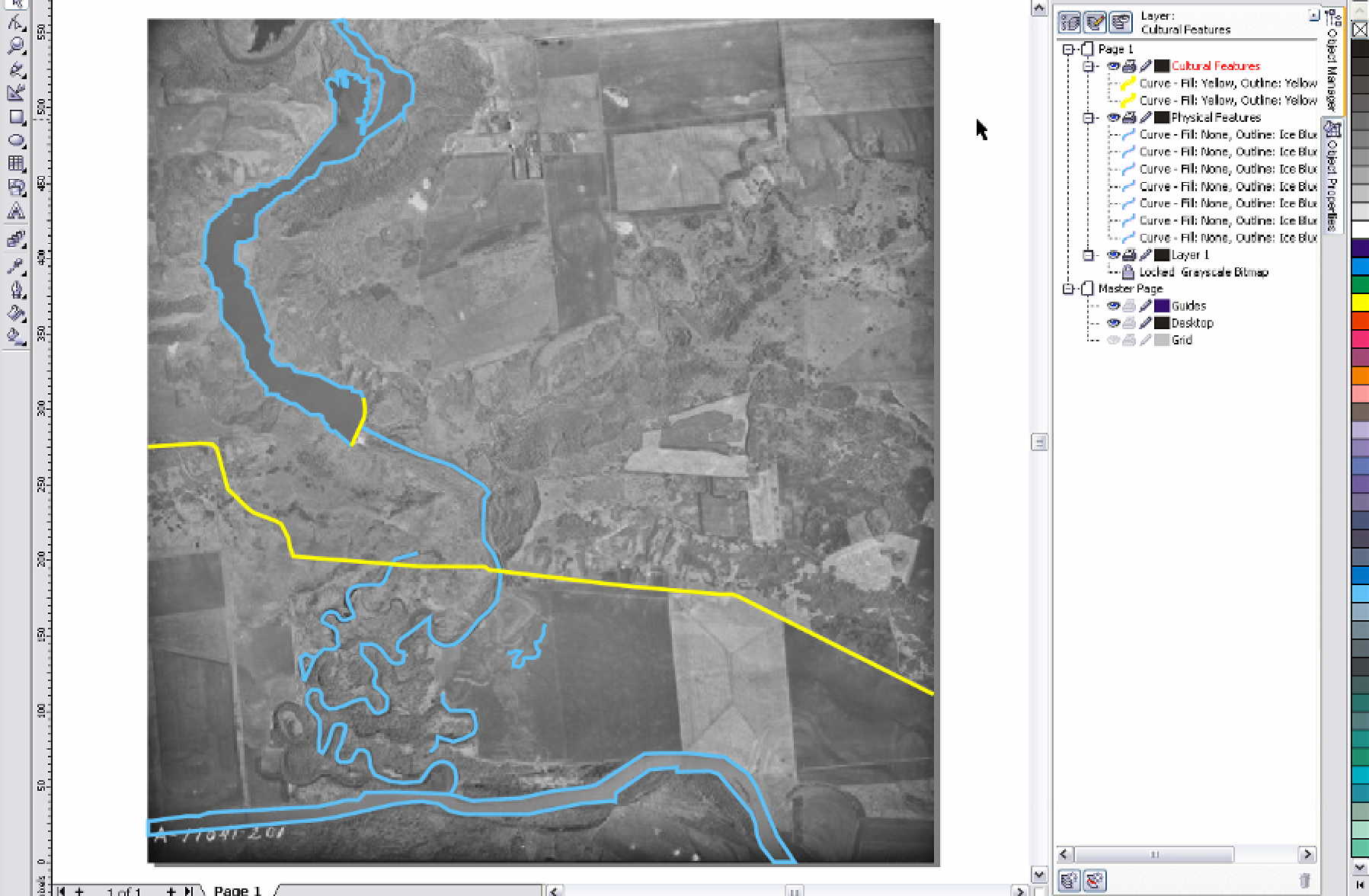
The Little Saskatchewan River (1) flows southward onto the floor of the Assiniboine spillway, bounded roughly by highway 459 (2). From that point south, it assumes an indirect meandering course (3) to the Assiniboine River (4). Several previous routes can be seen both west (3) and east (6) of the present course. Note also the dam (7) across the Little Saskatchewan River with a reservoir (8) to the north. This was the location of the first hydro-electric power station in Manitoba. Between 1900 and 1930 it supplied electricity to Brandon during the summer months. The dam was washed away and the reservoir emptied in 1949¹.

Notes

1. For a ground level photo of the dam see figure 16.26.







The image shows a digitized aerial photograph with several vector traces overlaid. A prominent yellow trace follows a winding path, likely a road or boundary. Multiple blue traces outline irregular shapes, possibly fields or other geographical features. A north arrow is located in the upper right quadrant of the image. Two scale bars are positioned at the bottom center: one labeled '1 km' and another labeled '1 mi.'. The software interface includes a top menu bar, a toolbar with various drawing tools, a ruler at the top and left, and an Object Manager panel on the right. The Object Manager panel shows a hierarchical list of objects, including 'Annotations', 'Cultural Features', and 'Physical Features'. The status bar at the bottom indicates 'Page 1' and provides keyboard shortcuts for various tools.

Figure 1.1.a

1947 Photo



Figure 1.1.a

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1. The Little Saskatchewan
2. Highway 459
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4. Assiniboine River
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Figure 1.1.a

1947 Photo



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2. Highway 459

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➤ Status

- Over 550 photographs
- In excess of 12,000 features
- Interpretation and processing complete

➤ Future Directions

- Final check of photos, features and text
- Launch sometime early in 2008
- Ongoing additions and revisions

➤ Why an e-book?

- A) Interactive nature
- B) Easily updated/changed
- C) Accessibility
- D) Cost

Questions?