

Scanned Aerial Photography: *Product Level Profile of Nova Scotia Metadata Standard*

INTRODUCTION

The following document is the standard to collect metadata for *scanned aerial photographs*. This profile and additional profiles of the Nova Scotia Metadata Standard for products such as digital orthophotographs and digital topographic data are available at:
www.nsgc.gov.ns.ca/mappingspecs/Specifications/

All metadata standards available via the above website are Federal Geographic Data Committee (FGDC) compliant, adhering to guidelines from the FGDC Content Standard for Digital Geospatial Metadata, also called the FGDC Metadata Standard, which may be found here:
http://www.fgdc.gov/standards/projects/FGDC-standards-projects/metadata/base-metadata/v2_0698.pdf

Metadata for scanned aerial photographs will be compiled in two levels: **collection** and **product**.

Collection level metadata – created by NSGC – consists of only one metadata record describing the **overall series** of photographs scanned during a project.

This record will be populated and edited by data owners at NSGC, using the existing online metadata entry tool, The Nova Scotia Discovery Portal (<http://142.176.62.104/discovery/>). This tool complies with the FGDC-compliant Nova Scotia Metadata Standard. Most fields in the collection level record will contain data that remains the same for each photograph in the series.

Collection level metadata will be housed in the database of the Nova Scotia Metadata Search Portal and may be found using that site's search tool, located here:
<http://142.176.62.104/gisportal/gisportal>

Product level metadata – created by the contractor – will refer to **individual photographs**. These records will be populated with information that generally varies per photograph, such as title and geographic reference information.

Product level metadata will be searchable through the Nova Scotia Metadata Search Portal, but at present will be editable at the desktop only (not editable online yet).

This document provides a list of the input fields that will be populated to create a product level record. It also provides descriptions, examples, and reference to corresponding FGDC elements.

List of Input Fields

An *input field* is a field specified in a database or text file that requires information to be supplied by a user. The following input fields are required to create a product level metadata record and are discussed in the next section, Input Fields.

- 01 Roll Number
- 02 Frame
- 03 Flight Line
- 04 Centre Point - Longitude
- 05 Centre Point - Latitude
- 06 Centre Point - Source
- 07 Rotation Angle
- 08 Keyword: NTS Sheet ID
- 09 Keyword: NTS Sheet Name
- 10 Keyword: GSA or Community Name
- 11 Keyword: County Name(s)
- 12 Flight Report
- 13 Original Photo: Date
- 14 Original Photo: Scale
- 15 Original Photo: Material
- 16 Original Photo: Type
- 17 Original Photo: Pos or Neg
- 18 Scanning Date
- 19 Scanner ID Name
- 20 Scanner Serial Number
- 21 Scanner Calibration Report
- 22 Number of Image Channels
- 23 Number of Bits Per Channel
- 24 Scanning Resolution
- 25 Scanned Photo File Format
- 26 Format Version
- 27 File Size
- 28 Contract Number
- 29 Scanning Production Group
- 30 QC Inspection Group
- 31 Related Metadata Records
- 32 Metadata Date

Quick Reference: Scanned Aerial Photography - Product Level Metadata

Order:	Input Field:	Format / Domain:	Length:	Example(s):	FGDC
01	Roll Number	free text	8	2006002 A04134	8.4
02	Frame	free text	4	42 3B 167C	8.4
03	Flight Line	free text	3	31 L-3 36B 45E (or W, N, S for direction)	1.2.3
04	Centre Point - Longitude	decimal degrees (decimal places min: 4 max: 7)	11	-65.4000000	1.5.1.2
05	Centre Point - Latitude	decimal degrees (decimal places min: 4 max: 7)	11	43.4500000	1.5.1.4
06	Centre Point - Source	"GPS" "Digitized"	9	GPS	1.2.3
07	Rotation Angle	numeric value	10	359.063261	1.2.3
08	Keyword: NTS Sheet ID	free text	6	11E/12 21A/01	1.6.2.2
09	Keyword: NTS Sheet Name	free text	100	Oxford	1.6.2.2
10	Keyword: GSA or Community Name	free text	100	Claremont	1.6.2.2
11	Keyword: County Name(s)	free text	255	Colchester County	1.6.2.2
12	Flight Report	free text	255	Line 31 Flight Report available through	8.9
13	Original Photo: Date	yyyy-mm-dd	10	1998-05-04	9.1.1
14	Original Photo: Scale	"10000" "40000" other numeric value	8	40000	2.5.1.2
15	Original Photo: Material	"Print" "Diapositive" "Film" or free text	100	Print	2.5.1.3
16	Original Photo: Type	"B&W" "Colour" "False Colour (i.e. Infrared)"	12	B&W	2.5.1.3
17	Original Photo: Pos or Neg	"Positive" "Negative"	8	Positive	2.5.1.3
18	Scanning Date	yyyy-mm-dd	10	2005-10-19	2.5.2.3
19	Scanner ID Name	free text	255	Epson - Expression 1680 Professional FireWire Color Scanner	1.2.3
20	Scanner Serial Number	free text	255	# E1680-PROFWR	1.2.3
21	Scanner Calibration Report	"Not applicable" or free text	100	epson-1680.txt	2.1.1
22	Number of Image Channels	"1" "3" other numeric value	2	1	1.15.1-RS
23	Number of Bits Per Channel	"8" other numeric value	2	8	1.2.3
24	Scanning Resolution	numeric value + ppi	8	1200 ppi	1.2.3
25	Scanned Photo File Format	"TIFF" "GEOTIFF" "JPEG" or free text	100	TIFF	6.4.2.1.1
26	Format Version	free text	100	6.0 1998	6.4.2.1.2
27	File Size	numeric value + Kb, Mb, or Gb	10	670 Mb	6.4.2.1.7
28	Contract Number	free text	100	Contract Number 137014	8.7.1
29	Scanning Production Group	free text	255	Hauts-Monts Inc.	1.11
30	QC Inspection Group	free text	255	Atlantic Air Survey Ltd., 199 Ritcey Crescent, Dartmouth, Nova Scotia B2W 6J9	1.11
31	Related Metadata Records	free text	255	Orthophoto: 0245590062560 Orthophoto Map: 0245590062560-pictou	8.4
32	Metadata Date	yyyy-mm-dd	10	2005-08-01	7.1

Input Tool Screen Capture

Scanned Aerial Photography – Product Level Metadata Input Tool					
01	Roll Number	<input type="text" value="95012"/>	18	Scanning Date	<input type="text" value="2005-10-19"/>
02	Frame	<input type="text" value="67C"/>	19	Scanner ID Name	<input type="text" value="Epson - Expression 1680 Professional FireWire Color Scanner"/>
03	Flight Line	<input type="text" value="28"/>	20	Scanner Serial Number	<input type="text" value="# E1680-PROFWR"/>
04	Centre Point - Longitude	<input type="text" value="64.9642"/>	21	Scanner Calibration Report	<input type="text" value="epson-1680.txt"/>
05	Centre Point - Latitude	<input type="text" value="45.6812"/>	22	Number of Image Channels	<input type="text" value="1"/>
06	Centre Point - Source	<input type="text" value="GPS"/>	23	Number of Bits Per Channel	<input type="text" value="8"/>
07	Rotation Angle	<input type="text" value="359.063261"/>	24	Scanning Resolution	<input type="text" value="1200"/>
Keywords			25	Scanned Photo File Format	<input type="text" value="TIFF"/>
08	NTS Sheet ID	<input type="text" value="11E/12"/>	26	Format Version	<input type="text" value="6.0"/>
09	NTS Sheet Name	<input type="text" value="Oxford"/>	27	File Size	<input type="text" value="670 Mb"/>
10	GSA or Community Name	<input type="text" value="Oxford"/>	28	Contract Number	<input type="text" value="137014"/>
11	County Name(s)	<input type="text" value="Cumberland County, Colchester County"/>	29	Scanning Production Group	<input type="text" value="Hauts-Monts Inc."/>
12	Flight Report	<input type="text" value="Flight Report for line 28 available from NSGC."/>	30	QC Inspection Group	<input type="text" value="James W. Sewall Co."/>
13	Original Photo: Date	<input type="text" value="1998-05-04"/>	31	Related Metadata Records	<input type="text" value="Orthophotos: 0245590062560, 0245590062561
Topo Data: pictou, new_glasgow
Orthophoto Map: 0245590062560-pictou,0245590062561-new_glasgow"/>
14	Original Photo: Scale 1:	<input type="text" value="10000"/>	32	Metadata Date:	<input type="text" value="2005-03-26"/>
15	Original Photo: Material	<input type="text" value="Print"/>			
16	Original Photo: Type	<input type="text" value="B&W"/>			
17	Original Photo: Pos or Neg	<input type="text" value="Positive"/>			

Record: of 3

Guide to Input Fields

An *input field* is a field specified in a database or text file that requires information to be supplied by a user. In this document input fields are shown in **Bold** text. Qualifiers following the input field provide information as to how each field should be populated, including examples and FGDC references.

Input Field

Provides a description of the information required by the user to populate the input field.

<i>Field Type:</i>	Data or Compound. Data fields require data entry supplied by a user. Compound fields do not require data entry and appear in the Nova Scotia Metadata Standard to delineate sections and subsections.
<i>Format/Domain:</i>	Specific information (words or phrases) or type of information (free text, dates, etc). Quotes " " around text in this field indicate that the quoted text is an exact phrase that can be used to populate an input field.
<i>Field Length:</i>	The number of characters allowed by the database containing the product level metadata, as defined in the standard.
<i>Example(s):</i>	One or more example that illustrates how to populate each input field.
<i>FGDC Field Title:</i>	Corresponding FGDC field title as it appears in the FGDC Metadata Standard.
<i>FGDC Reference No.:</i>	Order of appearance in the FGDC Metadata Standard.
<i>FGDC Short Name:</i>	Reference to the database title of each input field.

Input Fields

01 Roll Number

Number of the roll of film used to capture the original photograph. Roll number and Frame are used to derive the title of the metadata record (e.g. 95012-42).

<i>Field Type:</i>	Data
<i>Format / Domain:</i>	free text
<i>Field Length:</i>	8
<i>Example(s):</i>	95012 A04134
<i>FGDC Field Title:</i>	Title
<i>FGDC Reference No.:</i>	8.4
<i>FGDC Short Name:</i>	title

02 Frame

Frame number of the original photograph.

<i>Field Type:</i>	Data
<i>Format / Domain:</i>	free text
<i>Field Length:</i>	3
<i>Example(s):</i>	42 3B 67C
<i>FGDC Field Title:</i>	Title
<i>FGDC Reference No.:</i>	8.4
<i>FGDC Short Name:</i>	title

03 Flight Line

Number of the flight line flown to capture the original photographs.

<i>Field Type:</i>	Data
<i>Format / Domain:</i>	free text
<i>Field Length:</i>	3
<i>Example(s):</i>	31 L-3 36B 45E (or W, N, S for direction)
<i>FGDC Field Title:</i>	Supplemental Information
<i>FGDC Reference No.:</i>	1.2.3
<i>FGDC Short Name:</i>	supplinf

04 Centre Point - Longitude

**The longitude of the centre point of the aerial photograph, expressed as decimal degrees.
Decimal places min: 4 max: 7.**

<i>Field Type:</i>	Data
<i>Format / Domain:</i>	decimal degrees (decimal places min: 4 max: 7)
<i>Field Length:</i>	11
<i>Example(s):</i>	-65.4000000
<i>FGDC Field Title:</i>	East Bounding Coordinate
<i>FGDC Reference No.:</i>	1.5.1.2
<i>FGDC Short Name:</i>	eastbc

05 Centre Point - Latitude

**The latitude of the centre point of the aerial photograph, expressed as decimal degrees.
Decimal places min: 4 max: 7.**

<i>Field Type:</i>	Data
<i>Format / Domain:</i>	decimal degrees (decimal places min: 4 max: 7)
<i>Field Length:</i>	11
<i>Example(s):</i>	43.4500000
<i>FGDC Field Title:</i>	South Bounding Coordinate
<i>FGDC Reference No.:</i>	1.5.1.4
<i>FGDC Short Name:</i>	southbc

06 Centre Point - Source

The source of centre point information. Indicates whether the centre point coordinates were captured by GPS or digitizing.

<i>Field Type:</i>	Data
<i>Format / Domain:</i>	"GPS" "Digitized"
<i>Field Length:</i>	9
<i>Example(s):</i>	GPS
<i>FGDC Field Title:</i>	Supplemental Information
<i>FGDC Reference No.:</i>	1.2.3
<i>FGDC Short Name:</i>	supplinf

07 Rotation Angle

The rotation angle of the photograph.

<i>Field Type:</i>	Data
<i>Format / Domain:</i>	numeric value
<i>Field Length:</i>	10
<i>Example(s):</i>	359.063261
<i>FGDC Field Title:</i>	Supplemental Information
<i>FGDC Reference No.:</i>	1.2.3
<i>FGDC Short Name:</i>	supplinf

08 Keyword: NTS Sheet ID

NTS Sheet ID related to the photograph.

<i>Field Type:</i>	Data
<i>Format / Domain:</i>	free text
<i>Field Length:</i>	6
<i>Example(s):</i>	11E/12 21A/01
<i>FGDC Field Title:</i>	Place Keyword
<i>FGDC Reference No.:</i>	1.6.2.2
<i>FGDC Short Name:</i>	placekey

09 Keyword: NTS Sheet Name

NTS Sheet Name related to the photograph.

<i>Field Type:</i>	Data
<i>Format / Domain:</i>	free text
<i>Field Length:</i>	100
<i>Example(s):</i>	Oxford
<i>FGDC Field Title:</i>	Place Keyword
<i>FGDC Reference No.:</i>	1.6.2.2
<i>FGDC Short Name:</i>	placekey

10 **Keyword: GSA or Community Name**

Name of the GSA (General Service Area) or community at the centre point of the photograph.

<i>Field Type:</i>	Data
<i>Format / Domain:</i>	free text
<i>Field Length:</i>	100
<i>Example(s):</i>	Claremont
<i>FGDC Field Title:</i>	Place Keyword
<i>FGDC Reference No.:</i>	1.6.2.2
<i>FGDC Short Name:</i>	placekey

11 **Keyword: County Name(s)**

Name of the county(ies) shown in the photograph.

<i>Field Type:</i>	Data
<i>Format / Domain:</i>	free text
<i>Field Length:</i>	255
<i>Example(s):</i>	Colchester County
<i>FGDC Field Title:</i>	Place Keyword
<i>FGDC Reference No.:</i>	1.6.2.2
<i>FGDC Short Name:</i>	placekey

12 **Flight Report**

Information relating to the original photo flight reports.

<i>Field Type:</i>	Data
<i>Format / Domain:</i>	free text
<i>Field Length:</i>	255
<i>Example(s):</i>	Line 31 Flight Report available through NSGC.
<i>FGDC Field Title:</i>	Other Citation Details
<i>FGDC Reference No.:</i>	8.9
<i>FGDC Short Name:</i>	othercit

13 Original Photo: Date

Date the original photograph was taken, expressed as year-month-day (yyyy-mm-dd).

Field Type: Data
Format / Domain: yyyy-mm-dd
Field Length: 10
Example(s): 1998-05-04
FGDC Field Title: Calendar Date
FGDC Reference No.: 9.1.1
FGDC Short Name: caldate

14 Original Photo: Scale

The ratio of the distance on a photograph to the corresponding distance on the ground. Under FGDC guidelines, scale is expressed using the denominator only. For example, under these guidelines, a map with a scale of 1:10000 is expressed as 10000 in the metadata record.

Field Type: Data
Format / Domain: "10000"
"40000"
other numeric value
Field Length: 8
Example(s): 40000
FGDC Field Title: Source Scale Denominator
FGDC Reference No.: 2.5.1.2
FGDC Short Name: srcscale

15 Original Photo: Material

The medium from which the photograph was scanned.

Field Type: Data
Format / Domain: "Print"
"Diapositive"
"Film"
or free text
Field Length: 100
Example(s): Print
FGDC Field Title: Type of Source Media
FGDC Reference No.: 2.5.1.3
FGDC Short Name: typesrc

16 Original Photo: Type

Refers to either black and white or colour photography.

<i>Field Type:</i>	Data
<i>Format / Domain:</i>	"B&W" "Colour" "False Colour (i.e. Infrared)"
<i>Field Length:</i>	12
<i>Example(s):</i>	B&W
<i>FGDC Field Title:</i>	Type of Source Media
<i>FGDC Reference No.:</i>	2.5.1.3
<i>FGDC Short Name:</i>	typesrc

17 Original Photo: Pos or Neg

Refers to whether the original photograph was scanned from the positive or the negative format.

<i>Field Type:</i>	Data
<i>Format / Domain:</i>	"Positive" "Negative"
<i>Field Length:</i>	8
<i>Example(s):</i>	Positive
<i>FGDC Field Title:</i>	Type of Source Media
<i>FGDC Reference No.:</i>	2.5.1.3
<i>FGDC Short Name:</i>	typesrc

18 Scanning Date

Date the photograph was scanned, expressed as year-month-day (yyyy-mm-dd).

<i>Field Type:</i>	Data
<i>Format / Domain:</i>	yyyy-mm-dd
<i>Field Length:</i>	10
<i>Example(s):</i>	2005-10-19
<i>FGDC Field Title:</i>	Process Date
<i>FGDC Reference No.:</i>	2.5.2.3
<i>FGDC Short Name:</i>	procdte

19 Scanner ID Name

The make and model of the scanner used to scan the photographs. Expressed as: make "-" model.

<i>Field Type:</i>	Data
<i>Format / Domain:</i>	free text
<i>Field Length:</i>	255
<i>Example(s):</i>	Epson - Expression 1680 Professional FireWire Color Scanner
<i>FGDC Field Title:</i>	Supplemental Information
<i>FGDC Reference No.:</i>	1.2.3
<i>FGDC Short Name:</i>	supplinf

20 Scanner Serial Number

The unique serial number of the scanner, may include numeric and text characters.

<i>Field Type:</i>	Data
<i>Format / Domain:</i>	free text
<i>Field Length:</i>	255
<i>Example(s):</i>	# E1680-PROFWR
<i>FGDC Field Title:</i>	Supplemental Information
<i>FGDC Reference No.:</i>	1.2.3
<i>FGDC Short Name:</i>	supplinf

21 Scanner Calibration Report

Scanner calibration report file name, with file extension.

<i>Field Type:</i>	Data
<i>Format / Domain:</i>	"Not applicable" or free text
<i>Field Length:</i>	100
<i>Example(s):</i>	epson-1680.txt
<i>FGDC Field Title:</i>	Attribute Accuracy Report
<i>FGDC Reference No.:</i>	2.1.1
<i>FGDC Short Name:</i>	attraccr

22 Number of Image Channels

In the context of scanning, a range of measured wavelengths of energy, or portion of a frequency spectrum. Commonly related to a specific colour range. Also referred to as Image Band.

<i>Field Type:</i>	Data
<i>Format / Domain:</i>	"1" "3" other numeric value
<i>Field Length:</i>	2
<i>Example(s):</i>	1
<i>FGDC Field Title:</i>	Number of Bands
<i>FGDC Reference No.:</i>	1.15.1-RS
<i>FGDC Short Name:</i>	numbands

23 Number of Bits Per Channel

The number of bits used to describe the colour of each pixel.

<i>Field Type:</i>	Data
<i>Format / Domain:</i>	"8" other numeric value
<i>Field Length:</i>	2
<i>Example(s):</i>	8
<i>FGDC Field Title:</i>	Supplemental Information
<i>FGDC Reference No.:</i>	1.2.3
<i>FGDC Short Name:</i>	supplinf

24 Scanning Resolution

The physical size of pixels in the scan. Should be expressed as ppi for scanned aerial photography.

<i>Field Type:</i>	Data
<i>Format / Domain:</i>	numeric value + ppi
<i>Field Length:</i>	8
<i>Example(s):</i>	1200 ppi
<i>FGDC Field Title:</i>	Supplemental Information
<i>FGDC Reference No.:</i>	1.2.3
<i>FGDC Short Name:</i>	supplinf

25 Scanned Photo File Format

Digital file format of the scanned file (expressed as shortened version of the extension name).

<i>Field Type:</i>	Data
<i>Format / Domain:</i>	"TIFF" "GEOTIFF" "JPEG" or free text
<i>Field Length:</i>	100
<i>Example(s):</i>	TIFF
<i>FGDC Field Title:</i>	Format Name
<i>FGDC Reference No.:</i>	6.4.2.1.1
<i>FGDC Short Name:</i>	formname

26 Format Version

Version number or name of the file format.

<i>Field Type:</i>	Data
<i>Format / Domain:</i>	or free text
<i>Field Length:</i>	100
<i>Example(s):</i>	6.0 1998
<i>FGDC Field Title:</i>	Format Version
<i>FGDC Reference No.:</i>	6.4.2.1.2
<i>FGDC Short Name:</i>	formvern

27 File Size

The size, or estimated size, of the file in gigabytes, megabytes, or kilobytes.

<i>Field Type:</i>	Data
<i>Format / Domain:</i>	numeric value + Kb, Mb, or Gb
<i>Field Length:</i>	10
<i>Example(s):</i>	670 Mb
<i>FGDC Field Title:</i>	Transfer Size
<i>FGDC Reference No.:</i>	6.4.2.1.7
<i>FGDC Short Name:</i>	transize

28 Contract Number

DPO (Departmental Purchase Order) or in-house PO (Purchase Order) number.

Field Type: Data
Format / Domain: free text
Field Length: 100
Example(s): Contract Number 137014
FGDC Field Title: Series Name
FGDC Reference No.: 8.7.1
FGDC Short Name: sername

29 Scanning Production Group

Name of the organization responsible for production of deliverables for a project.

Field Type: Data
Format / Domain: free text
Field Length: 255
Example(s): Hauts-Monts Inc.
FGDC Field Title: Data Set Credit
FGDC Reference No.: 1.11
FGDC Short Name: datacred

30 QC Inspection Group

Name of the organization responsible for quality control of deliverables for a project.

Field Type: Data
Format / Domain: free text
Field Length: 255
Example(s): Atlantic Air Survey Ltd., 199 Ritcey Crescent, Dartmouth, Nova Scotia B2W 6J9
FGDC Field Title: Data Set Credit
FGDC Reference No.: 1.11
FGDC Short Name: datacred

31 Related Metadata Records

Reference all other metadata records required to complete metadata for this photo, as it relates to an orthophoto map. Include the records for the related orthophoto(s), topographic data, and orthophoto map(s). Not applicable to 1:10000 DNR photography.

<i>Field Type:</i>	Data
<i>Format / Domain:</i>	free text
<i>Field Length:</i>	255
<i>Example(s):</i>	Orthophoto: 0245590062560 Topo Data: pictou Orthophoto Map: 0245590062560-pictou
<i>FGDC Field Title:</i>	Title
<i>FGDC Reference No.:</i>	8.4
<i>FGDC Short Name:</i>	title

32 Metadata Date

The date that the metadata was created or last updated, expressed as year-month-day (yyyy-mm-dd).

<i>Field Type:</i>	Data
<i>Format / Domain:</i>	yyyy-mm-dd
<i>Field Length:</i>	10
<i>Example(s):</i>	2005-08-01
<i>FGDC Field Title:</i>	Metadata Date
<i>FGDC Reference No.:</i>	7.1
<i>FGDC Short Name:</i>	metd