

From Direct Actor to Engaged Guide: Developing a Manual of Mapping Conventions for a World Wide Conservation Organization

Mark Denil¹, May Chung²

¹Conservation International, ²Nova Scotia College of Art and Design
mdenil@conservation.org, mchung@nscad.ns.ca

ABSTRACT

The usual cartographic standards guide consists of detailed specifications for very specific map products. Every organization that issues standardized map products will have such a manual or specifications schedule and expect all maps produced under their name to conform. Cartographic textbooks, on the other hand, must attempt to reflect the tremendous breadth of map making activity with a general address. The situation faced by Conservation International is one for which a few tightly described map templates will not suffice, yet the demands for quality, professionalism, and consistency cannot be met with ad-hoc solutions. The *Design and Production Guide for Maps at Conservation International* is intended to bridge that gap by providing good, well chosen directives defining good cartographic practice within the context of the organization. The *Guide* is being produced by the Conservation Mapping Program of the Center for Applied Biodiversity Science [CABS] at Conservation International in Washington DC.

INTRODUCTION

Conservation International boasts a history of more than a decade producing useful and pertinent map products. Maps, as one can well imagine, play a critical part in virtually all aspects of Conservation International activities. One role of the Mapping Program at CI is to strive to raise the overall quality of the maps produced by the organization. The program seeks to accomplish this by both example and by capacity building amongst the many dozens of map makers throughout the organization. As GIS, remote sensing, and map making capacity and sophistication grows in the various branches, so too grows the urgency of establishing consistent conventions, procedures, and protocols.

The desired end is to engender a consistency of look and feel amongst CI maps, and to exclude a culture of personal styles. A relatively straightforward task under some circumstances, it is made more complicated by the tremendous range of map products required by the organization; the variety of topics, audiences, formats, subjects, and scales that require accommodation is mind boggling. The more restrictive and formulaic the prescriptions, the easier the definition, implementation, and policing of the standard and the more straightforward any training becomes. But can any prescription cover all the needs?, and isn't it likely that a directive, or even an entire standard once found unworkable (and successfully ignored) would thereafter be completely abandoned? Contrariwise, it is clearly not enough to hope that good interpretations of general principals will happen by themselves. Informed decisions need to be grounded in ready information, and the parameters of any flexible standard must be clearly communicated.

GROUNDING IN THEORY

The core of the guide is the theoretical rubric under which cartographic practice at CI is carried on; that is, that maps are rhetorical entities and map making is a rhetorical activity. Every map (whether from CI or not) is required to be *useful*, *usable*, and *persuasive*, and the criteria for usefulness, usability, and persuasiveness is determined by the norms and expectations of the interpretive community of the map user. Clearly, every map must be addressed to its audience, and it is the rhetorical nature of that address which allows the map to function. This rhetorical core is thoroughly explored in the guide, and it informs and frames all discussion of production concerns.

GROUNDING IN PRACTICE

In addition to guiding theory, the guide also identifies and discusses key topics of production concern: that is to say, methods and procedures for physical construction of the map document. The focus is kept upon issues that would not usually be encountered by a GIS technician. The subset of cartographic skills that comprise the whole of a GIS skill set

can, these days, be acquired in a variety of ways. This guide is directed to making maps, and not to simply analyzing geographic data.

Many, or most of the day to day cartographic production concerns, or ‘map fundamentals’ presented in this guide are, in themselves, neither original nor unique to this publication. Manuals of cartography have been around for a long time, and there are many moderately good examples available. As no single published source has been found to serve as a complete general guide, however, the *Design and Production Guide for Maps at Conservation International* selects and contextualizes useful elements from a variety of sources. This compendium of good practice underpins the understandings necessary for interpretation and adaptation of the guidelines. Even were it not intended to be a compact source, the guide could not hope to be encyclopedic; a reading list of material for further study is also provided.

EXAMPLE PRODUCTION ISSUES COVERED

- page architecture / design
- control of white space
- control of contrast
- gestalt concerns (for example: avoiding superfluous graphic boxes)
- dichotomy of map space and paper space
- using layout sketches
- construction of tables, and particularly of legends
- natural legends
- general vocabularies and grammars of symbol usage
- small multiples (diachronic and synchronic)
- inset and key maps
- generalization issues, including maintaining the character of a data set
- choosing appropriate data sets
- modifying data for clarity
- rationalizing data conflicts
- line feature offsetting

table 1

1	Bellin
2	Cambridge Bay
3	Chesterfield Inlet
4	Coral Harbour
5	Fort Chimo
6	Fort Norman
7	George River
8	Great Whale River
9	Hall Beach
10	Igluligaarjuk
11	Ikaluktutiak
12	Inouodjouac
13	Inukjuak
14	Notre-Dame-de-Kangirsuajuaq
15	Kangirsuajuaq
16	Kangirsuk
17	Koartak
18	Kuujuaq
19	Kuujuaaraapik
...	...

Table 1 is easy to read. In table 2, the reader's eye must leap across a large space. This can be a source of misreading.

table 2

Bellin	1
Cambridge Bay	2
Chesterfield Inlet	3
Coral Harbour	4
Fort Chimo	5
Fort Norman	6
George River	7
Great Whale River	8
Hall Beach	9
Igluligaarjuk	10
Ikaluktutiak	11
Inouodjouac	12
Inukjuak	13
Notre-Dame-de-Kangirsuajuaq	14
Kangirsuajuaq	15
Kangirsuk	16
Koartak	17
Kuujuaq	18
Kuujuaaraapik	19
...	...

Compare the amount of white space within the tables above. This space is represented by the graphic shapes shown to the right.

white space

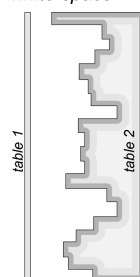


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...	...

Justifying the table columns to the centre of the table maintains an even gap to be bridged by the reader's eye, regardless of the varied lengths of the record items. The clear, close association avoids misreading. Notice how the second line of item 14 is indented so as not to imply that it is another record entry.

table 3

1	Bellin
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illustration of directions for constructing tables

Some elements of a CI map are more strictly defined than others. Logo usage, of course, is governed by an organizational level style guide and is entirely non-negotiable, but other elements like the familiar CI green bar also have well defined parameters of use. There is, as well, a ‘proper CI way’ to construct a scale bar, and certain manifestations, like measurements in miles, are expressly forbidden. CI conventions exist too for handling multiple logos from partner, donor and other categories of partners: this, as you might imagine, is a tricky and sensitive issue.

All these categories of strictures are simply rules: any discussion about elements of this type are policy explanation, not debating points.

Beyond that, is the general encouragement to look at maps; and not only to look but to look critically and to critique. Maps must be created against a horizon of maps and only informed critical evaluation can discern the true horizon from the general smoke and fog.

SYNOPSIS OF THE BOOK

Part 1: General Theoretical discussion of Cartographic Design.

This section outlines the conceptual framework for undertaking map making work. Its goal is to establish a common understanding of map making activity, particularly in the context of Biodiversity Conservation. It is not intended as a 'formula' but rather as a set of guidelines and a compendium of rationales and procedures to aid the institution's map makers to make maps that are recognizable as CI products, as well as being useful, usable and persuasive.

Central to this understanding is the recognition of the rhetorical nature of cartographic practice; that is, that any map is created only to convey some particular view of some particular situation to some one.

Under this general rubric, the theoretic underpinnings of various cartographic activities are also discussed. For example: recommended approaches to terrain representation, the operation and use of map projections, various models for printed and projected color, and guidelines for working with printers are included. The focus for selection and presentation of topics is on the kinds of information specific and critical to cartographic activity that is *not* general practice for GIS technical personnel.

Part 2: Map Production: Rules, Guidelines, and Conventions.

Conventional practices for Conservation International maps are laid out in this section. The focus is on description and discussion of the various elements of a map, and the way they are executed and assembled, that makes a particular map recognizable as a Conservation International product. Some elements of a CI map are rigidly prescribed (for instance, logo and certain other distinctive graphic element usage), while certain other aspects of a particular map are governed by institutional conventions (for example, selection of map projections for particular areas of interest, such as Biodiversity Hotspots). These rules and conventions are discussed and explained so as to make clear what each convention is and how it can be applied.

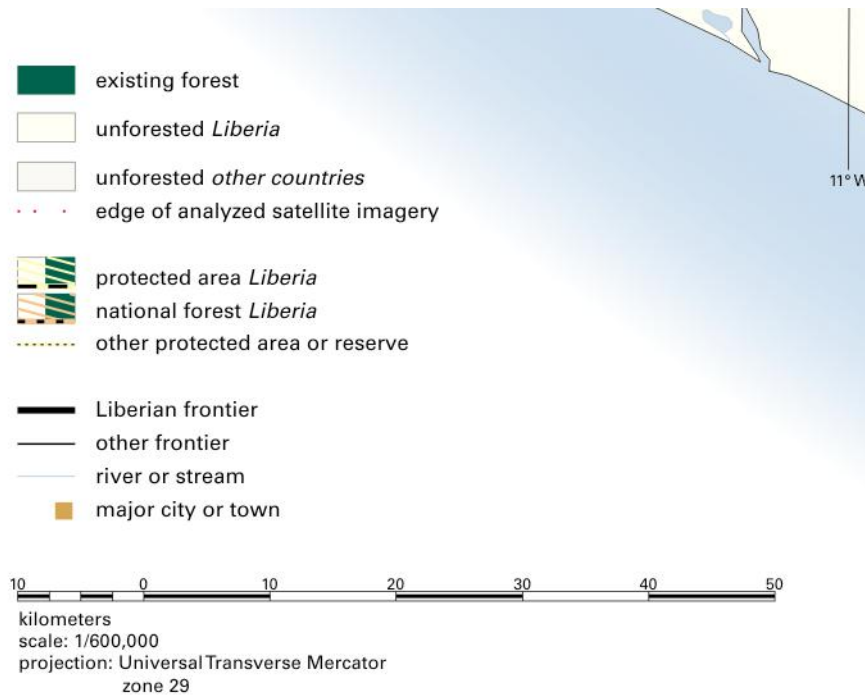
Additionally, the range and variety of acceptable map design format is detailed. Many of these conventions may be appropriate for a particular type or size of product (for journal or book illustrations, for large format folded maps, or so forth), and these concerns are discussed here.

Part 3: Symbols and Specifications for Map Feature Elements.

Tables and lists for both map feature symbols and for other map design elements (map furniture) are found in Part 3. In some cases, again, these specifications may be strictly prescribed, or broadly conventional institutionally, or simply general recommendations directing good practice. Many may have been discussed in greater or lesser depth in Part 2, but they are gathered here for easy reference.

Part 4: Illustration gallery

This color section contains illustrations for entries in parts 1-3. Samples are provided, many taken from actual CI map products, to assist the manual reader in adapting the outlined conventions to their own particular projects.



sample legend and scale bar from the map: *Liberia Forest Re-assessment* ©2005 CI

Questions related to the *Design and Production Guide for Maps at Conservation International* should be directed to:

Mark Denil

Director of Conservation Mapping / Chief Cartographer,
 GIS and Mapping Laboratory,
 CABS, Conservation International
 1919 M Street NW, Suite 600
 Washington, District of Columbia, USA 20036
m.denil@conservation.org

PRESENTING AUTHOR BIOGRAPHY

Mark Denil is the Director of Conservation Mapping / Chief Cartographer for Conservation International, based in Washington, DC, in the United States. He has worked in Cartography and GIS for over ten years in Canada and the US. A graduate of the College of Geographic Sciences [COGS] in Nova Scotia, Canada, he also holds a Master of Fine Art degree in Design and Visual Communication from the Nova Scotia College of Art and Design [NSCAD]. His MFA thesis, Cartographic Design: Rhetoric and Persuasion was recently published in *Cartographic Perspectives*.