Designing Great Maps for Print and Image

Allen Carroll and Larry Orman
About Allen and Larry

Larry Orman, Exec. Dir., GreenInfo Network
• Magic marker map maker for years pre-GIS
• 19 years NGO advocacy and 19 geotech world
• Maps are a powerful lens for seeing the world

Allen Carroll, Esri Online Content Mgr.
• Family cartographer and navigator since age 5
• 27 years at National Geographic, 12 of them as Chief Cartographer
• Believer in the power of maps to inform and inspire
Why we’re here
This?  . . . or this?
About this workshop series

#1: General Overview

#2: Print/image

#3: Web/mobile (1:30pm today)
What we’ll cover in this session

1. Why good map design?
2. Visual perception
3. Content & story in design
4. Design process
5. Common pitfalls
6. What to remember
Why Focus on Good Map Design?
But first, a quiz for you
Over the past five years, Sierra Watch has created remarkable conservation outcomes for a valley that was once slated for massive development.

In 2003, Sierra Watch established conservation priorities for Martis Valley to create a legacy for the region. Through collaborative efforts, Martis Valley has been identified as a critical area for habitat, water quality, recreation, and open space — much of which was saved.

Since then, Sierra Watch has worked with conservation experts, stakeholders, and community leaders to shape our shared future.

Through our advocacy, negotiation, and legal efforts, public lands are more protected and open space management plans, conservation deeds, and buffer protections, and we've created a pipeline of additional funding for major forest acquisitions.

Looking ahead, Sierra Watch seeks to secure additional protections for remaining private and public lands, including the 2,400-acre Sierra Pacific Industries property, and to equip the community with new natural resources for generations to come.
1? or 2?
Good Design Matters

- Maps ARE communication – must persuade, inform
- Maps can take big efforts ($, time)
- Maps are hard for people to understand
- Professional credibility from product quality
- Competition for attention nowadays
“We’re inundated with data but starved for meaning”
Goals for map design

Aha!
Inspire
Compel
Persuade
Inform
Adjudicate
How Visual Perception Works
How your brain perceives

PRE-ATTENTION <1 second

RECOGNITION 1-3 seconds

COGNITION 3-20 seconds +
<1 second
Color, shapes, contrast

1-2 seconds
resolve objects

3+ seconds
engage content

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First glimpse is critical for engagement

<1 second  
1-2 seconds  
3+ seconds
Field of vision

Page sized map/image

Poster sized map
Eye tracking, movement
Design for eye movement
Content & Story in Design
communication design

Intent + Audience + Strategy + Format

map design = just cartography?
Who is your audience?

What is your point?
Your audience . . .

Willing to learn, but busy
Intelligent, but maybe not map savvy

i.e., Allen’s mom..
Your point . . ?
Make your point with storytelling

- A message
- A sequence of telling
- With audience in mind
From raw data to story
From raw data to story
What's the point?

No story, no point
There’s a great *story* in here . . . somewhere
“A little forest left, 1 big opportunity”
Where and how will your map be seen?
Design Process
Design gives voice to our information

So **HOW** do we *design* great maps?
Designing a map

(Assume story and audience)

1. Process
2. Concept
3. Branding
4. Composition
5. Layout
6. Cartography
1. **PROCESS of Design**

*(depends on time/budget . . .)*

- Concept + data test
- Composition sketch
- Draft frame
- Draft map content
- Full draft, test
- Refine, test
- Finalize
2. Concept

Sketch main message and key elements for layout
3. Branding

Look & feel
Color
Logo
(fonts)
4. Composition . . .

How visual space works

• center
• balance
• negative space
• rule of thirds
• flow/eye movement
5. Layout

Grids:
- Align
- Apportion
- Balance
6. Cartography

Support the story!
6. Cartography
Support the story!
6. Cartography

Support the story!
6. Cartography

Support the story!
Techniques –

Map in Title Bar

- Determine final extent of the map (changes require new shapefile)

- Create a shapefile of title bar (create a graphic of your title bar and then convert to shapefile)

- Use the Erase tool on title bar, inputting shapefile you want to extend into the title bar
Techniques – Feather Boundary

1. **Buffer wizard** on outline feature – 10+ rings

2. **Select options for buffers** styles - coastal fades use the “Outside only” option.

3. **Add a field** for the transparency values – use **field calculator** to divide or multiply the buffer values, with most transparent as highest number (0-100), least transparent ring as lowest.

4. **Symbology tab** of the Layer Properties and select color.

5. Click Advanced Transparency - select the transparency values field. Each **ring of the buffer** will be displayed as the color you selected with that percent of transparency.
If design doesn’t feel good in your heart, what the mind thinks doesn’t matter
Extreme Makeover

The GIS Edition
How do you know a design is good?

- 3 second test
- Formal critiques
- Pay attention over time
- Compare yours to others’
Map Design Pitfalls
Pitfalls in Map Design

1. Undefined overall message
2. Everything at once - no hierarchy
3. Passive titles
4. Disorganized grid
5. Poor color choices
6. Overdefined elements (boxes..)
7. Element-size relationships
8. Fonts, label hierarchies
Pitfalls:

Undefined message
Pitfalls:

Everything at once
(no hierarchy)
Pitfalls:

Passive & extended titles

e.g.,

What We’ve Accomplished

Areas Needing Protection

cetc.
Pitfalls:

Disorganized grid
Pitfalls:

Poor color choices
Pitfalls:

Overdefined elements
(esp. boxes)
Pitfalls:

Confusing font hierarchies
Pitfalls:

Element – size relationships

Legend
Scale
North arrow
Pitfalls:

Not showcasing good design
What to Remember
Maps are stories that unfold in layers of perception.

See through audience eyes, from the beginning.

Direct the eye through your map story.

Remove and simplify.

Always grow your design skills.
Open Discussion

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Thank you…

Please fill out the session survey:

**ID: 1378**

Online – [www.esri.com/ucsessionsurveys](http://www.esri.com/ucsessionsurveys)

Paper – pick up and put in drop box