Designing Great Maps:
How to Communicate and Inspire with Print and Digital Maps

Allen Carroll and Larry Orman
About Allen and Larry

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

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
What motivates us

A Map Gallery encounter . . .
About this workshop series

#1: General Overview

#2: Print/image  Thursday, 10:15 Room 08

#3: Web/mobile  Thursday, 1:30 Room 08
What we’ll cover this session

1. Visual Perception
2. The Page (or Screen) is a Stage
3. Some CLUES to making great maps
4. Design Process
5. What to Remember
But first, a quiz for you
We’ll ask . . .

• **What** is this map/site about?
• Is it **appealing** to you?
• Would you **stick around** …or **move on**?
April 27, 2014
Arkansas Tornadoes

Estimated rotation path based on NWS Weather Radar using the NCDC WCT

Created by Brian Crumpler (@EMGIS)
Lessons?

• **First** impressions matter!

• **Attractive** designs, accessible interfaces are key

• **Simplicity** is vital
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How visual perception works
How your brain perceives

- **PRE-ATTENTION**: <1 second
- **RECOGNITION**: 1-3 seconds
- **COGNITION**: 3-20 seconds +
First glimpse is critical for engagement
Field of vision

Page sized map

Poster sized map
How our eyes move
Design for eye movement
The page (and screen) is a stage.
The **Page** (and screen) is a **Stage**

A successful production combines many elements into a seamless whole.
Put your star in the spotlight

Create visual hierarchies

Tenor in the spotlight…
Put your star in the spotlight

Create visual hierarchies

Beautiful map as centerpiece...
Put your star in the spotlight

Create visual hierarchies

Graph and number at center stage
Put your diva in a bright costume

Figure-ground: bright colors against neutral

Bright soprano, subdued chorus...
Put your diva in a bright costume

Figure-ground: bright colors against neutral

Key groundwater basins in the spotlight…
Put your diva in a bright costume

Figure-ground: bright colors against neutral

Major battles in brightest color
The power of color

HSV

- Hue
- Saturation
- Value
The power of color

HSV

- Hue
- Saturation
- Value
The power of color

HSV

• Hue

• Saturation

• Value

Our secret weapon!
The power of color

Using color for emphasis
(and de-emphasis)

Saturated sopranos
Desaturated choruses
The power of color

Saturated color at center stage; desaturated in the background
The power of color

Saturated color at center stage; desaturated in the background
The power of color

Beware of unintended effects

Merry Christmas!
Howard Johnson’s
Oh, say can you see…

Danger!
Joy!
A cast of thousands?

Best to reduce the number of performers
A cast of thousands?

Best to reduce the number of performers
Some **CLUES**

to making great maps for today’s world
A great map. . .

1. **C**onnects with its audience
2. **L**imits user options
3. **U**ser experience supports the story
4. **E**asy-to-read maps
5. **S**trives for simplicity
Think of your mom
Step back and explain things
Avoid being (too) technical
Be informal but respectful
Think about your **primary** audience

Lots of people may see your map, but who do you really want to convince?
The best maps and apps do one thing really well.

An all-purpose map viewer may make sense once in a while…

But a focused, single-purpose app will better serve a specific audience.
User experience supports the story

Think about the job your map is doing, and choose the means by which users will experience your story.

There are lots of ways to interact with maps.

- Locate
- Navigate
- Compare
- Narrate
- Show change
CLUES
Easy-to-read maps

A map for storytelling is very different from a map for analysis.

Base map as context—not competition
CLUES Easy-to-read maps

Simple, accessible thematic maps

Strip off non-essential information

Use limited color palettes
CLUES
Easy-to-read maps

Avoid visually complex symbols and icons
CLUES
Strive for Simplicity

Eliminate unnecessary options

Avoid “GIS-y” functions:

No arrays of little icons
CLUES
Strive for Simplicity

Eliminate unnecessary options

USER EXPERIENCE
No rows of obscure icons, no long lists of options

VISUAL
Avoid unnecessary lines, rules, drop shadows, etc.

EDITORIAL
Keep text, labels, and titles clear, simple, and descriptive
Strive for Simplicity

Eliminate unnecessary options

awesome.good.is/features/011/Wanderlust/index.html
CLUES
Strive for Simplicity

Eliminate Edit! Shorten! Reduce! Distill! Simplify!

Digital media = ADHD media
CLUES

Connect with your audience
Limit user options
User experience supports your story
Easy-to-read maps
Strive for simplicity
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

(+Cartography)
1. PROCESS of Design

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

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

Creative leap
Mimic
Copy
Sketch
Mockup
3. Branding

Look & feel:
Colors
Logo
Fonts
Graphics
4. Composition . . .

How visual space works

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

**Grids**
- Align
- Apportion
- Balance

**Wireframe**
How do you know a design is good?

• 1-3 second test
• Formal critiques
• Pay attention over time
• Compare yours to others’
• +Webstats
What to Remember
➔ Keep it **simple**; eliminate non-essentials

➔ **Single**-purpose to fit priority audience

➔ Map and context work **together**

➔ Cartography includes **user** experience

➔ Digital - screens small, but maps **deep** (it’s a new medium...take advantage of it!)
Thank you…

Please fill out the session survey:

**ID: 1231**

Online – [www.esri.com/ucsessionsurveys](http://www.esri.com/ucsessionsurveys)
Paper – pick up and put in drop box
Open Discussion

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