

“In a broad sense, accessibility simply means ensuring that a given page on the Web is able to be accessed. Accessibility is not about disability; rather, it’s about people getting to the shared information that the vision of the Web has made manifest.”

— Holzschlag, M.E. 2006 (forward of "Web Accessibility" by Thatcher et al)



Copyright Josh Anderchek (2005).



Designing for Disability

Guidelines

Common Problems

Tools and Assistive Technologies

Current Research & Future Work

McMillan, W.W. *Computing for Users with Special Needs and Models of Computer-Human Interaction*. Conference on Human Factors in Computing Systems, CHI '92, pp. 143-148. Addison Wesley, 1992.

Eric Bergman , Earl Johnson, *Toward Accessible Human-Computer Interaction*, Advances in human-computer interaction (vol. 5), Ablex Publishing Corp., Norwood, NJ, 1995

Designing for Disability

“Providing accessibility means removing barriers that prevent people with disabilities from participating in substantial life activities, including the use of services, products, and information.”

— Bergman & Johnson 1995

Direct Access

Assistive Access





GREEN
⠠⠠⠠⠠⠠⠠



BLACK
⠠⠠⠠⠠



RED
⠠⠠⠠⠠



TAN
⠠⠠⠠⠠



PURPLE
⠠⠠⠠⠠



BRIDGE
to
PB 95/ODC

ORANGE
⠠⠠⠠⠠



BLUE
⠠⠠⠠⠠



WALKWAY
to
PB 105

YELLOW
⠠⠠⠠⠠



PINK
⠠⠠⠠⠠



Designs for Low Vision & Blind

Braille Display

Screen Reader Software

OCR and Text to Speech

Screen Magnification



02/01/

MUTE
>>> CAMPAIGN ET KIT, WE'VE JUST BEEN TOLD THAT AL QAEDA DID

POLITICS

CNN

OBAMA	58%	495,602
CLINTON	41%	358,039

WISCONSIN

70% | 70%

MCCAIN	55%	175,149
HUCKABEE	37%	118,550
PAUL	8%	14,770

Designs for Deaf

Telecommunications Device for the
Deaf (TDD)

Closed Captioning
ShowSounds

“Web accessibility means that people with disabilities can use the Web. More specifically, Web accessibility means that people with disabilities can perceive, understand, navigate, and interact with the Web, and that they can contribute to the Web. Web accessibility also benefits others, including older people with changing abilities due to aging.”

— W3C

Guidelines

W3C Guidelines

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W3C Home

Web Accessibility Initiative (WAI) Home
Introducing Accessibility
Guidelines & Techniques
Managing Accessibility
Evaluating Accessibility
WAI Groups
Authoring Tool (AUWG)
Education & Outreach (EOWG)
Evaluation Tools (ERT WG)
Protocols & Formats (PFWG)
Research (RDIG)
User Agent (UAWG)
WAI Interest Group (WAI IG)
>> Web Content (WCAG WG)
▪ Minutes
▪ Current Participants

Web Content Accessibility Guidelines Working Group (WCAG WG)

Thank You, John

25 March 2008

John Slatin, who was Co-Chair of the Web Content Accessibility Guidelines (WCAG) Working Group in 2005 and 2006 passed away last night. He will be dearly missed by all of us on the working group both for his contributions and for what he brought to the whole process: his energy, his good humor, his patience and his insight. His loss is a loss to us all and to the field of accessibility as a whole. Thank you John.

For those who want more information, John and his wife Anna have chronicled his experiences on his blog "[Leukemia Letters](#)", and information about services will be posted there.

Announcements and Meetings

- [WCAG 2.0 Candidate Recommendation published 30 April 2008](#)
- [Instructions for Commenting on WCAG 2.0 Documents](#)

Public Working Drafts

A WCAG 2.0 Candidate Recommendation was published 30 April 2008. This document is accompanied by other support materials:

Page Contents

- [Announcements and Meetings](#)
- [Current Work](#)
- [Publications](#)
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<http://www.w3.org/WAI/GL/>

W3C Guidelines

1. Content

The information in a Web page or Web application: natural information such as text, images, and sounds code or markup that defines structure, presentation, etc.

2. Web browsers, media players, and other “user agents”

3. Assistive technology, in some cases - screen readers, alternative keyboards, switches, scanning software, etc.

4. Users’ knowledge, experiences, & in some cases, adaptive strategies using the Web

5. Developers

Designers, coders, authors, etc., including developers with disabilities and users who contribute content

6. Authoring tools

Software that creates Web sites

7. Evaluation tools

8. Web accessibility evaluation tools, HTML validators, CSS validators, etc.

<http://www.w3.org/WAI/intro/components>

W3C Guidelines

WAI Guidelines and Techniques

1. WAI guidelines define how to implement alternative text for accessibility in the different components
2. Authoring Tool Accessibility Guidelines (ATAG) addresses authoring tools
3. Web Content Accessibility Guidelines (WCAG) addresses
4. Web content, and is used by developers, authoring tools, and accessibility evaluation tools
5. User Agent Accessibility Guidelines (UAAG) addresses
6. Web browsers and media players, including some aspects of assistive technologies

<http://www.w3.org/WAI/intro/atag.php>

Perceivable

```

```

Day	Mon	Tues	Wed	Thur	Fri
Outlook					
High (°C)	25°	20°	15°	10°	5°
Low (°C)	15°	10°	5°	0°	-5°

Day	Mon	Tues	Wed	Thur	Fri
Outlook	sunny	partly cloudy	IMAGE	rain	snow
High (°C)	25°	20°	15°	10°	5°
Low (°C)	15°	10°	5°	0°	-5°

Perceivable

```

```

Day	Mon	Tues	Wed	Thur	Fri
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High (°C)	25°	20°	15°	10°	5°
Low (°C)	15°	10°	5°	0°	-5°

```
Outlook  
[sunny.]  
[partly cloudy.]  
[Image with not alt text: http://images.acmesite.com/images/Proj  
%202079436/x-locale/common.forecast/H.1--NS/0/thunder.gif]  
[rain.]  
[snow.]  
High (°C)
```

Operable



Welcome! [Sign in](#) or [register](#).

Categories ▾

Motors

Stores

A

See the unrivaled value of a BMW.

Well equipped models + No-cost maintenance + Fuel efficiency

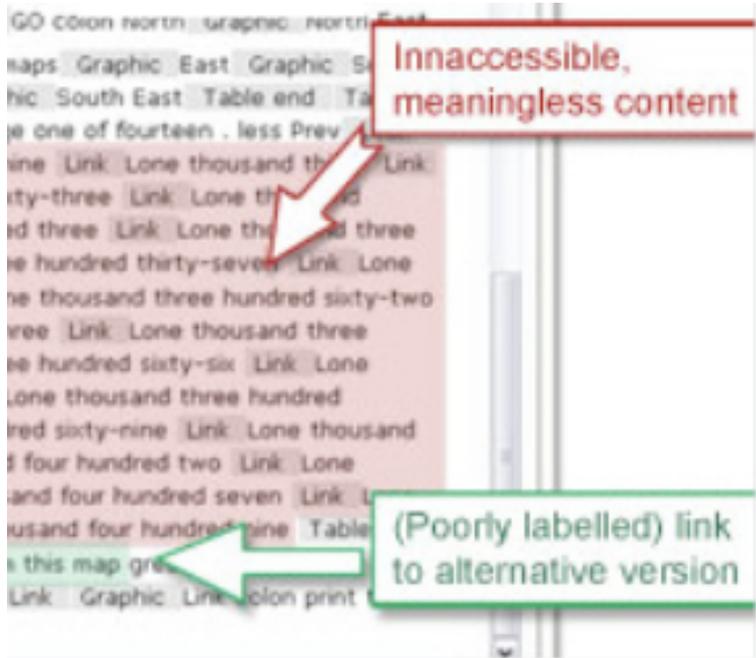
[Roll over to learn more.](#)

[Home](#) > [Buy](#) > [Antiques](#) > [Books & Manuscripts](#) > **Search results**

Find

Include title and description

Understandable



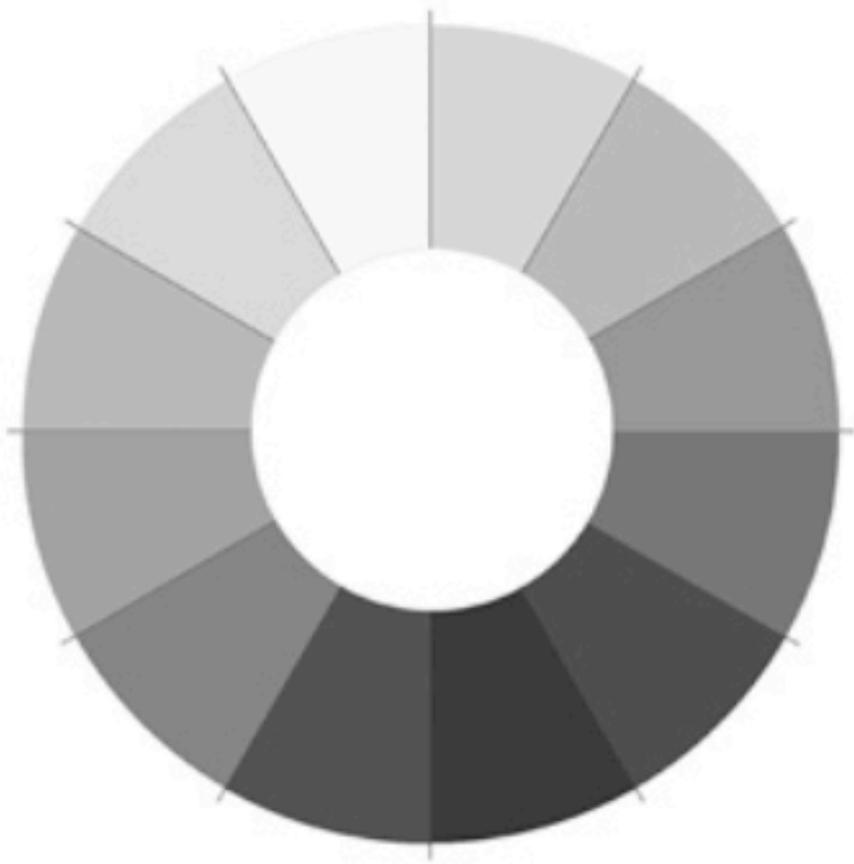
Robust

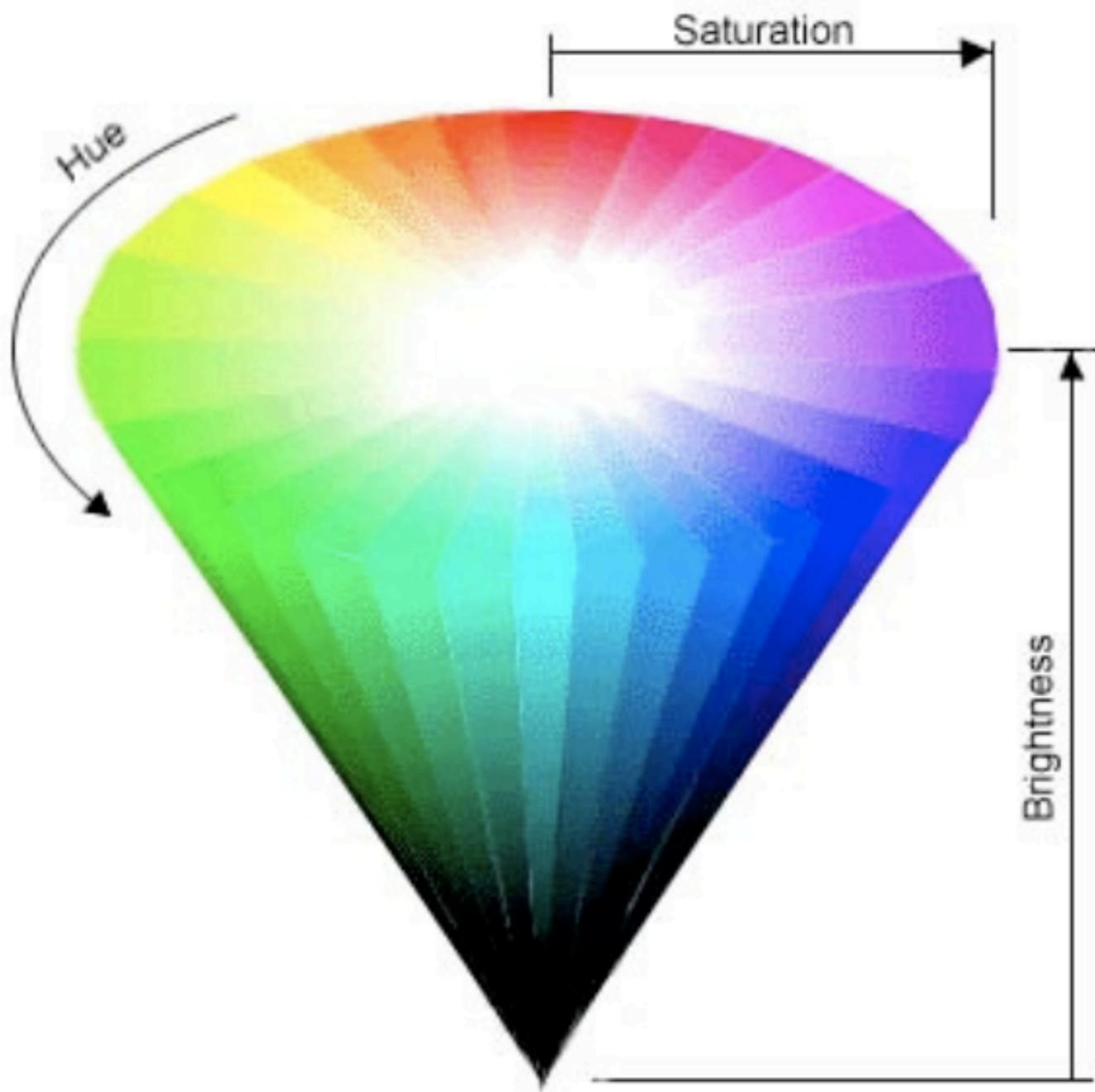
Common Problems

Finding Failures

- * F1: Failure of SC 1.3.3 due to changing the meaning of content by positioning information with CSS
- * F2: Failure of SC 1.3.1 and 1.3.4 due to using CSS to create variations in presentation of text that conveys information without also using the appropriate markup or text
- * F3: Failure of SC 1.1.1 due to using CSS to include images that convey important information
- * F4: Failure of SC 2.2.2 due to using text-decoration:blink without a mechanism to stop it in less than three seconds
- * F5: Failure of SC 3.1.1 due to using CSS styling to control directionality in XHTML/HTML
- * F7: Failure of SC 2.2.2 due to using script or applet, such as Java or Flash, that has blinking content without a mechanism to pause the content that blinks for more than three seconds
- * F8: Failure of SC 1.1.1 due to using some auditory or visual sound effects
- * F9: Failure of SC 3.2.5 due to changing the context when the user removes focus from a form element
- * F10: Failure of SC 2.1.1 due to combining multiple content formats in a way that traps users inside one format type
- * F12: Failure of SC 2.2.6 due to having a session time-out without a mechanism for saving user's input and re-establishing that information upon re-authentication
- * F13: Failure of SC 1.3.2 due to having a text alternative that does not include information that is conveyed by color in the image
- * F14: Failure of SC 1.3.5 due to identifying content only by its shape or location
- * F15: Failure of SC 4.1.2 due to implementing custom controls that do not use an accessibility API for the technology, or do so incompletely
- * F16: Failure of SC 2.2.3 due to including scrolling content where there is not a mechanism to pause and restart the content
- * F17: Failure of SC 4.1.1 due to insufficient information in DOM to determine one-to-one relationships (e.g., between labels with same id) in HTML
- * F19: Failure of SC 4.2.1 and 4.2.3 due to not providing a method for the user to find the alternative conforming version of a non-conforming Web unit
- * F20: Failure of SC 1.1.1 and 4.1.2 due to not updating text alternatives when changes to non-text content occur
- * F22: Failure of SC 3.2.5 due to opening windows that are not requested by the user
- * F23: Failure of SC 1.4.2 due to playing a sound longer than 3 seconds where there is no mechanism to turn it off
- * F24: Failure of SC 1.4.1 due to specifying foreground colors without specifying background colors or vice versa
- * F25: Failure of SC 2.4.3 due to the title of a Web unit not identifying the contents
- * F26: Failure of SC 1.3.5 due to using a non-text mark alone to convey information
- * F28: Failure of SC 4.1.1 due to using markup that results in inconsistent DOMs in user agents
- * F30: Failure of SC 1.1.1 due to using text alternatives that are not alternatives (e.g. filenames or placeholder text)
- * F31: Failure of SC 3.2.4 due to using two different labels for the same function on different pages
- * F32: Failure of SC 1.3.3 due to using white space characters to control spacing within a word
- * F33: Failure of SC 1.3.1 and 1.3.3 due to using white space characters to create multiple columns in plain text content
- * F34: Failure of SC 1.3.1 and 1.3.3 due to using white space characters to format tables in plain text content
- * F36: Failure of SC 3.2.2 due to automatically submitting a form and presenting new content without prior warning when the last field in the form is given a value
- * F37: Failure of SC 3.2.2 due to launching a new window without prior warning when the status of a radio button, check box or select list is changed
- * F38: Failure of SC 1.1.1 due to omitting the alt-attribute for non-text content used for decorative purposes only in HTML
- * F39: Failure of SC 1.1.1 due to providing a text alternative that is not null. (e.g. alt="spacer" or alt="image") for Images that should be ignored by AT
- * F40: Failure of SC 2.2.1 due to using meta redirect with a time-out
- * F41: Failure of SC 2.2.1, 2.2.5, and 3.2.5 due to using meta refresh with a time-out
- * F42: Failure of SC 1.3.1 due to using scripting events to emulate links
- * F43: Failure of SC 1.3.1 due to using structural markup in a way that does not represent relationships in the content
- * F44: Failure of SC 2.4.6 due to using tabindex to create a tab order that does not follow relationships and sequences in the content
- * F46: Failure of SC 1.3.1 due to using th elements, caption elements, or non-empty summary attributes in layout tables
- * F47: Failure of SC 2.2.2 due to using the blink element
- * F48: Failure of SC 1.3.1 due to using the pre element to markup tabular information
- * F49: Failure of SC 1.3.3 due to changing the meaning of content by positioning information with HTML layout tables
- * F50: Failure of SC 2.2.2 due to a script that causes a blink effect without a mechanism to stop the blinking at 3 seconds or less
- * F52: Failure of SC 3.2.1 due to opening a new window as soon as a new page is loaded without prior warning
- * F54: Failure of SC 2.1.1 due to using only pointing-device-specific event handlers (including gesture) for a function
- * F55: Failure of SC 2.1.1 due to using script to move focus within focusable elements
- * F57: Failure of SC 4.2.1 and 4.2.3 caused by defaulting to non-conforming version as a result of content negotiation
- * F58: Failure of SC 2.2.1 due to using server-side techniques to automatically redirect pages after a time-out
- * F59: Failure of SC 4.1.2 due to using script to make div or span a user interface control in HTML
- * F60: Failure of SC 3.2.5 due to launching a new window when a user enters text into an input field
- * F61: Failure of SC 3.2.5 due to complete change of main content through an automatic update that the user cannot disable from within the content
- * F62: Failure of SC 4.1.1 due to insufficient information in DOM to determine specific relationships in XML

<http://www.w3.org/TR/2006/WD-WCAG20-TECHS-20060427/>









Effective



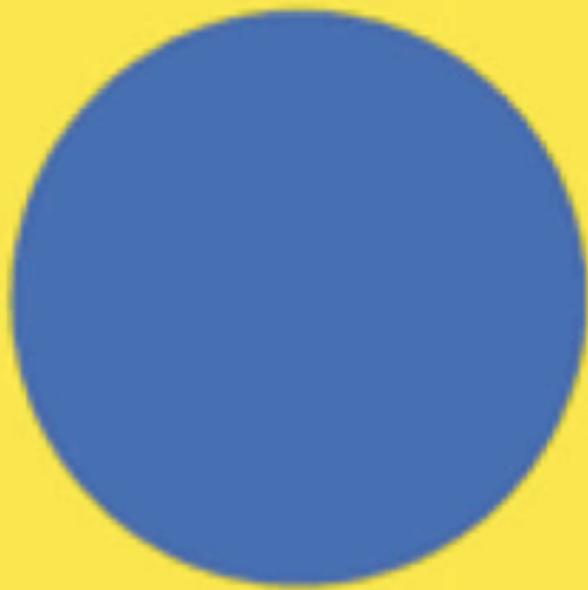
**Not as
effective**



Effective



**Not as
effective**



Effective



**Not as
effective**

Tools and Assistive Technologies

OCR and Text to Speech Demo

Current Research and Future Work

Accessing Accessibility

Literacy

Kaphingst et al 2006, *Accessibility of Web Sites Containing Colorectal Cancer Information to Adults with Limited Literacy*

Accessibility Standards

Providenti & Zai 2007, *Web accessibility at academic libraries: standards, legislation, and enforcement*

Bigham et al 2007 *WebinSitu: a comparative analysis of blind and sighted browsing behavior*

Assessing Adoption

Users

Wobbrock 2007 *Measures of Text Entry Performance* (in *Text Entry Systems* by MacKenzie & Tanaka-Ishii)

Dawe 2006, *Desperately seeking simplicity: how young adults with cognitive disabilities and their families adopt assistive technologies*

Assessing Adoption cont.

Web Designers

Lazar et al 2004, 'Improving web accessibility: a study of webmaster perceptions'

Tools that Improve Accessibility

Motor Impairment

Gajos 2007, Automatically generating user interfaces adapted to users' motor and vision capabilities

Gajos 2008, Improving the performance of motor-impaired users with automatically-generated, ability-based interfaces

Tools that Improve Accessibility

Vision Impairment

Bigham et al 2006, *WebInSight: Making Web Images Accessible*

Ahn et al 2006 *Improving accessibility of the web with a computer game*

Next Steps