



Expertise Centre for Accessible Media & Culture

A Video Player accessible to all? Yes, it's possible!

Ricardo Garcia, Account Manager
AccessibilityOz

It's not just
about vision
impairments



Learning Objectives

1. Compare the accessibility compliance of 37 different video players
2. Identify the three most common accessibility showstoppers in video players
3. Recommend the two most accessible video players



About AccessibilityOz

Services:

- Audits
- Mobile testing
- Building web sites
- CMS testing
- Accessible design
- Video accessibility
- User testing
- OS / browser testing

- Consultation
- Accessible documents

Products:

- OzPlayer
- OzART
- OzWiki
- Factsheets
- A11y Voices



Video is
everywhere...and
used by (almost)
everyone



Some facts about video content

- One-third of all online activity is watching video
- Over half of all video content is viewed on mobile
- Over 500 million people are watching video on Facebook every day (100 million hours)
- More than 500 million hours of videos are watched on YouTube every day



...and about who uses it

- 85% of Facebook videos are watched without sound
- Completion of a video with captions doubles compared to without captions
- Videos with transcripts earned 16% more revenue than videos without transcripts
- 80% of people that use captions are **not** Deaf or Hard Of Hearing



...but there's stuff that makes a video inaccessible

- Inadequate keyboard access
- Insufficient control and operation
- Incorrect implementation
- Inaccessible content
- Lack of transcript, captions or audio descriptions





“Video is a very important source of information and has become integral part of culture now. Blind individuals must not be excluded from access to data provided in video content. You can’t see, but you can understand.”



So how do you
create an
accessible video
experience?

We need:

1. No flashing content
2. Never auto-play
3. Accessible video player
4. Accessible content in the video
5. Accessible transcript
6. Accessible captions
7. Accessible audio descriptions



...and also an ACCESSIBLE video player!

- Adequate keyboard access (navigation, no keyboard trap, focus)
- Sufficient control and operation of captions
- Supports audio-descriptions (and they're easy to find!!)
- Use of color
- Access to transcripts
- Supported by mainstream browsers and OS

Example of Keyboard trap

[New to volunteering](#)

[Find a volunteer opportunity](#)

[Volunteering in an emergency](#)

[Volunteer background checks](#)

[Volunteer rights and responsibilities](#)

[Volunteer training](#)

[Volunteering through your work](#)

[Frequently asked questions](#)


[Volunteers tell their stories](#)

Marine volunteers in Victoria

[View comments](#) | [Add a comment](#)

Victoria's marine sanctuaries are special places that protect very rare species that don't occur anywhere else in the world, and the colour and diversity is comparable with coral reefs. In this video you'll discover the wide range of ways marine volunteers help maintain and protect Victoria's Marine Parks.

Marine Volunteers in Victoria



Dr. Steffan Howe
Manager Marine Science Parks Victoria

[Read a transcript of this video](#)
[Watch this video in an accessible YouTube player](#)

keyboard trap - unable to play or bypass the video with the keyboard

...and another

Melbourne moratorium against Vietnam War

Things to think about

1. Before viewing

What are the views of war in your family or friendship group, and what are these views based upon?

What images or movies do you think of when you think of war? Are these a positive or negative representation of war? What do these depictions suggest about the society that created them?

keyboard trap

2. As you view

3. After viewing

4. Next steps



How about missing Keyboard focus?

The image shows a screenshot of a YouTube player interface with several annotations highlighting accessibility issues related to keyboard focus. The interface includes a green header bar with a 'YouTube Address' field and a 'Load' button. Below this is a search bar with a 'Go' button. The main video player area shows a video of a diver underwater. To the left of the video is a 'Video Size' menu with 'Small', 'Medium', and 'Large' options. Below the video is a control bar with play, previous, next, stop, volume, and full screen buttons. At the bottom left, there is a copyright notice and a link to 'documentation and help is here'.

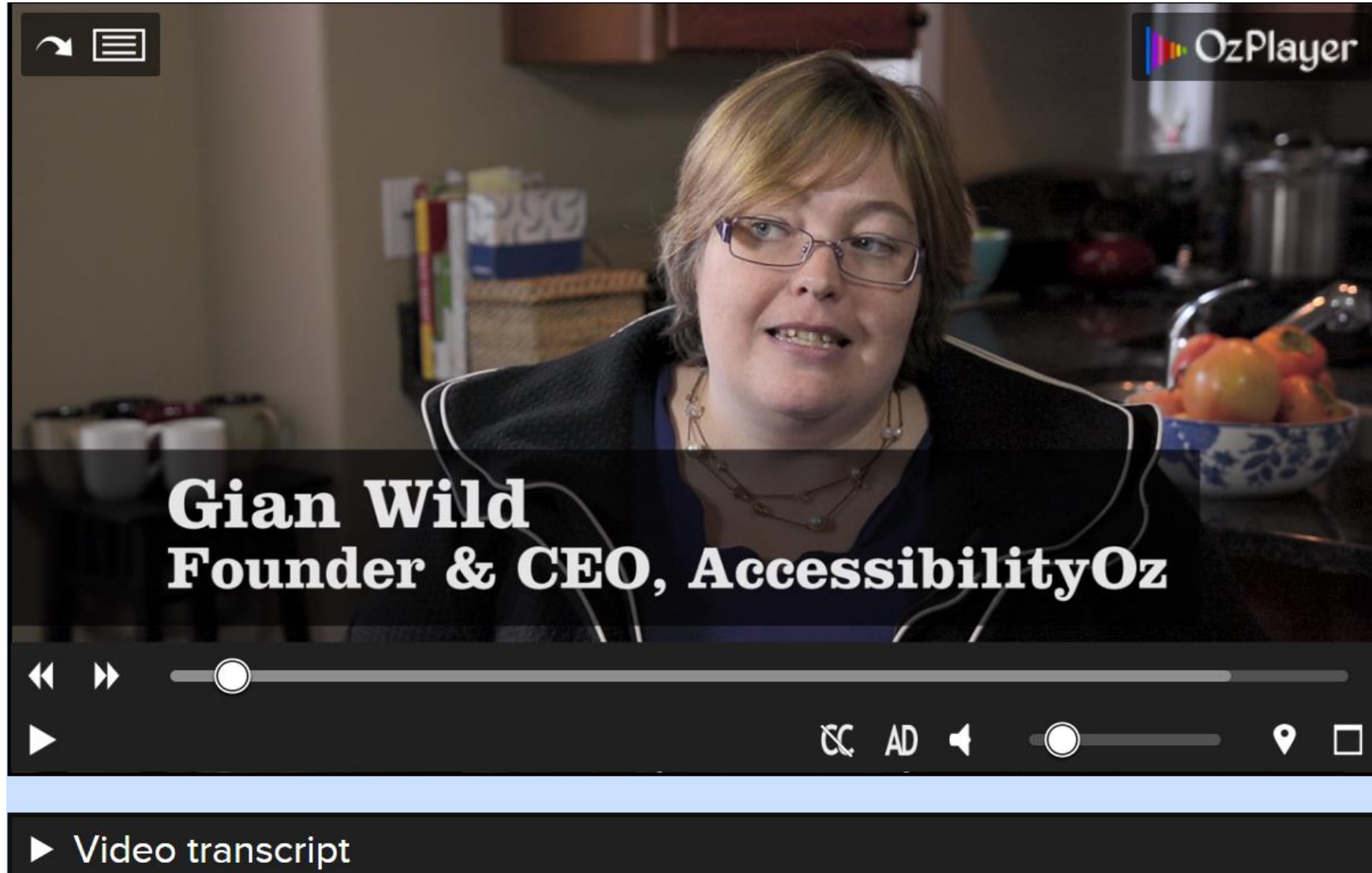
Annotations:

- no keyboard focus indicator on some items:** A red box highlights the 'Video Size' menu, with an arrow pointing to the 'Small' button.
- colour used to indicate volume level:** A red box highlights the volume slider, with an arrow pointing to the blue bar.
- help is after the video:** A red box highlights the link 'documentation and help is here' at the bottom left, with an arrow pointing to it.

Interface Elements:

- YouTube Address:** **Load**
- You can go to the YouTube video you want to watch and copy and paste the address at the top into this box.**
- Search:** **Go**
- Video Size:** **Small**, **Medium**, **Large**
- Search Results / Your Playlist:** **No playl**
- Video Title:** Pope's Eye Port Phillip Heads Marine National Park
- YouTube Volume**
- Copyright:** © 2008 by Chris Heilmann [documentation and help is here.](#)

...so we built our own accessible video player



Some cool OzPlayer features

- Skip links
 - Skip video entirely
 - Skip to transcript
- Access to help information before the video
- Fully keyboard accessible
- Highly visible keyboard focus indicator on all controls





Now, you
think YouTube
is accessible,
right?

Infinite scrolling and auto-play

due to the use of infinite scrolling in the comments the right-hand column is not accessible to the keyboard - including the ability to turn off the autoplay

Up next

AUTOPLAY

Honest Trailers - Guardians of the Galaxy 2
Screen Junkies
4.5M views
5:56

Honest Trailers - Stranger Things
Screen Junkies
3M views
7:16

Honest Trailers - Spider-Man: Homecoming
Screen Junkies
3.1M views
4:47

Honest Trailers - The Mummy (2017)
Screen Junkies
2.3M views
4:47

Honest Trailers - Star Trek: The Next Generation
Screen Junkies
2.6M views
8:33

Honest Trailers - Beauty and The Beast (2017)
Screen Junkies
3.2M views
4:02

Honest Trailers - Blade Runner
Screen Junkies
1.9M views
5:43

Honest Trailers - Rogue One: A Star Wars Story

Honest Trailers - Wonder Woman
Screen Junkies
4,055,316 views
88K likes
4K comments
SHARE



Not accessible to the keyboard



Upload button not accessible

You can only upload videos by activating this button – which has no alternative



Select files to upload

This link needs to be activated to upload a video - it does not have an alternative

...so we tested
the accessibility of
OzPlayer...and
another 36 Video
players



Video players tested

- AblePlayer
- Acorn
- Adobe
- AFB
- Amazon
- AMI Player
- Brightcove
- Facebook
- JW Player
- Kaltura
- MediaElement
- MediaSite
- Ooyala
- OzPlayer
- Panopto
- PayPal
- Plyr
- RAMP
- Video.js
- Vidyard
- Vimeo
- Viostream
- Wistia
- Yahoo
- YouTube
- YouTube embed



...and looked for typical “show-stoppers”

- Audio plays automatically
- Video contains keyboard trap
- Full-screen video contains reverse keyboard trap
- Cannot play video with keyboard
- Cannot pause video
- Browser crashes



About the testing

Mobile:

- Google Pixel 1, Android 8.0, Chrome: 62.0.3202.73;
- iPhone 7+, iOS 10.3.2, Safari



Round One Knockouts

- | | | |
|-------------------------|-------------------------|------------------------|
| • AblePlayer | Kaltura | • Video.js |
| • Acorn | MediaElement | • Vidyard |
| • Adobe | MediaSite | • Vimeo |
| • AFB | Ooyala | • Viostream |
| • Amazon | OzPlayer | • Wistia |
| • AMI Player | Panopto | • Yahoo |
| • Brightcove | PayPal | • YouTube |
| • Facebook | Plyr | • YouTube embed |
| • JW Player | RAMP | |

Controls

- Video volume can be changed independent of system volume
- Color alone has not been used to convey information
- Color contrast is sufficient (AA)

Keyboard

- Video is keyboard accessible
- Video has the correct keyboard focus order
- Video controls have a keyboard focus indicator
- Video controls have a highly visible keyboard focus indicator (AA)



Transcripts and captions

- Where a video supports a transcript, the video transcript is easy to find
- Video supports captions
- Video captions are easy-to-find
- Video caption color contrast is sufficient (AA)
- Where video supports multi-lingual captions, the correct LANG attribute is used

Audio descriptions

- Video supports audio descriptions



Statistics at the end of testing

Lowest to highest:

- MediaSite: 57%
- Panopto: 64%
- YouTube embedded, Plyr & JWPlayer: 71%
- AblePlayer: 79%
- Kaltura: 86%
- OzPlayer: 100%



Issues

MediaSite (57%):

- Low color contrast
- Low or no keyboard accessibility
- No keyboard focus indicators
- Inaccurate keyboard focus order
- No audio descriptions

Panopto (64%):

- Color alone
- Low color contrast
- No highly visible keyboard focus indicator
- Transcript not easy to access
- No audio descriptions



Issues (II)

YouTube embedded (71%):

- Low color contrast
- Low caption color contrast
- No highly visible keyboard focus indicators
- No audio descriptions

Plyr (71%):

- Color alone
- Low color contrast
- No highly visible keyboard focus indicator
- No audio descriptions

Issues (III)

JWPlayer (71%):

- Color alone
- Low color contrast
- No highly visible keyboard focus indicators
- No audio descriptions

AblePlayer (79%):

- Color alone
- Low color contrast
- Transcript is not easy-to-access

Issues (IV)

Kaltura (86%):

- Low color contrast
- No audio descriptions

OzPlayer (100%)

- Yay! (A sigh of relief!)



And then there
was eight...



Screen reader testing

Windows 10 with JAWS:

- IE
- FireFox
- Chrome

Windows 10 with NVDA:

- IE
- FireFox
- Chrome
- Edge

iOS:

- Safari with VoiceOver

Android

- Chrome with TalkBack



Showstoppers from screen reader testing

- Video could not be played



Round Two Knockouts

- AblePlayer
- Kaltura
- MediaSite
- OzPlayer
- ~~Panopto~~
- JWPlayer
- Plyr
- YouTube embed

Screen reader tests

- Player's controls are labelled
- Player's controls are easy-to-find
- Button status (on/off) is announced correctly
- Volume level is announced while changing
- Current time of the video is announced when requested
- Fast forwarding or rewinding is operable
- The title of the video is easy to find



Statistics at the end of testing with screen readers

Lowest to highest:

- JWPlayer: 59%
- MediaSuite and YouTube embed: 69%
- Kaltura: 73%
- Plyr: 77%
- AblePlayer: 79%
- OzPlayer: 98%



Issues found

JWPlayer (59%):

- Player's controls are not easy-to-find
- Button status/volumen level is not announced
- Captions are not read automatically
- FF/RW not available on mobile

MediaSite (69%)

- Player's controls are not easy-to-find
- Button status is not announced
- Captions are not read automatically
- FF/RW not available on mobile

Issues found (II)

YouTube embed (69%):

- Player's controls are not easy-to-find
- Captions are not read automatically
- Caption text is not easy-to-find
- Caption status not announced on Android

Kaltura (73%)

- Player's controls are not easy-to-find
- Volume level not announced
- Captions are not read automatically
- FF/RW not available on Android

Issues (III)

Plyr (77%):

- Player's controls are not easy-to-find
- Button status/volumen level is not announced
- Captions are not read automatically

AblePlayer (79%)

- Player's controls are not easy-to-find
- Button status not read correctly
- Could not operate captions with JAWS or NVDA or on mobile



Issues (IV)

OzPlayer (98%):

- FF/RW not available on Android Chrome



And then there was seven...



Showstoppers

- Cannot play video
- Cannot pause video
- Video crashed browser



Round Three Knockouts

- AblePlayer
 - ~~Kaltura~~
 - ~~MediaSite~~
 - OzPlayer
- JWPlayer
 - Plyr
 - ~~YouTube embed~~

Statistics at the end of testing

Lowest to highest:

- JWPlayer: 75%
- AblePlayer: 79%
- Plyr: 86%
- OzPlayer: 89%



Mobile tests

- Video volume can be changed independent of system volume
- Color alone has not been used to convey information
- Color contrast is sufficient (AA)
- Where the video supports a transcript, the video transcript is easy-to-find

Mobile tests

- Video supports captions
- Video captions are easy-to-access
- Video caption color contrast is sufficient (AA)
- Where video supports multi-lingual captions, the correct LANG attribute is used
- Video supports audio descriptions

Issues identified

JWPlayer (75%):

- Volume cannot be changed independent of system volume
- Color alone
- Low color contrast
- No audio descriptions

AblePlayer (79%)

- Volume cannot be changed independent of system volume
- Color alone
- Low color contrast
- Captions sometimes appear twice

Issues identified (II)

Plyr (86%):

- Color alone
- No audio descriptions

OzPlayer (89%)

- Volume cannot be changed independent of system volume
- No audio descriptions

About the testing

Mobile:

- iPad, iOS 10, Zagg keyboard



Showstoppers

- Cannot play video with keyboard
- Cannot pause video with keyboard
- Crashed browser



Statistics at the end of testing

Lowest to highest:

- AblePlayer: 100%
- OzPlayer: 100%

What we tested:

- Controls are available to the keyboard



Final results

	AblePlayer	OzPlayer
Testing	79%	100%
Screen reader testing	79%	98%
Mobile testing	79%	89%
Mobile keyboard testing	100%	100%
Total	84%	97%

Access AblePlayer and OzPlayer

AblePlayer:

- <http://ableplayer.github.io/ableplayer>

OzPlayer:

- <http://www.accessibilityoz.com/ozplayer>
- Code generator:
<http://www.accessibilityoz.com/ozplayer/ozplayer-code-generator>



It's still not good
enough

What's next?

Testing on Mac and other browsers ...Did we miss any players?



We are happy to share
our results:

<https://www.accessibilityoz.com/ozplayer/video-player-testing-icchp-july-2018/>

[OzWiki Video factsheet](#)

inquiries@accessibilityoz.com



Thank you!

Ricardo Garcia Bahamonde, IAAP CPACC,
Account Manager, AccessibilityOz

ricardo@accessibilityoz.com

