Professional Resource:

ARKive—An Intersection of Conservation, Multimedia and Usability

Julie Ann DeCesare
Education and Research, Providence College, Providence, RI USA

ARKive (http://www.arkive.org)

Saying animal videos are popular on the Internet is an understatement. I will admit to have fallen into a time vortex, or at least wandered from my original search engine query, to a video or videos of animals. There is no shortage of commercial, education, and user created video content with a focus on animals. Videos are often emailed and shared among families, friends, and colleagues. There is an organic and automatic community built around them. The nature of these videos proposes a challenge: How do you move beyond the popular and viral videos and find high quality, vetted, yet accessible material?

There are many sites that cater to this community, but one example that should rise to the top of educators' lists for their content, quality, and partnerships is ARKive: Images of Life on Earth (http://www.arkive.org). The web has certainly provided a platform for animal lovers, conservationists, zoologists, scientists, environmentalists, photographers, photojournalists, academics, botanists, instructors, and videographers to reach a wide demographic and to make nature studies and documentation collaborative and cooperative. By looking at ARKive critically and from both the search interface and the back end we can see the standards and partnerships developed to create a robust media resource.

ARKive is an excellent resource for teachers, lecturers, librarians, students, and instructional technologists from the point of view of usability and content. I will explain the authoritative measures the creators and partners have created to ensure vibrant media, educational content, and parameters of taxonomy and search terms.

Known as a digital "Noah's Ark."[1], ARKive is a publicly funded digital library focusing on endangered species and aimed at the general public as well as conservationists. ARKive's core mission is to promote the conservation and study of the world's animal, marine, plant, and fungi kingdoms and their threatened species by providing high quality multimedia in a free, easily accessible digital repository.[2] Powerful imagery, video, educational resources, and digital mass communication tools are the focus of their initiative. ARKive is approachable from the perspective of all ages, and all technical and scientific backgrounds.

The goal and overall mission of ARKive is to include and promote the conservation of all species on the International Union for Conservation of Nature (IUCN) Red List of Endangered Species.[3] Created by the Wildscreen Trust (http://www.wildscreen.org.uk/), a charitable foundation based in the UK and US, the ARKive initiative relies on many partnerships and sponsorships to create, maintain, and publish its content. The principal sponsor is the Environmental Agency of Abu Dhabi. Of the many sponsors included are HSBC, Bank of America Merrill Lynch, and the British Council. Technical and media partnerships include Hewlett Packard, the Smithsonian Institution, London Natural History Museum, World Wildlife Fund, and the BBC. There are over 70,000 images and videos, over 5,000 media donors (including BBC, National Geographic, and Discovery Communications), content and research partners the Smithsonian and the Natural History Museum, London.[4]

Let's talk about usability. There are multiple avenues on the site for user browsing. ARKive's search functionality is in a single search box, which can be narrowed down to format (image or video) or species. While the search capabilities are adequate, an advanced search function would be a welcomed enhancement for such excellent content. Navigation is based on a "breadcrumb" of pages. This is certainly helpful, but a user often has to back up to return to a navigation screen. ARKive provides an alphabetical list of species

by scientific and common names, as well as a "Top 50 Species" listing. An "Explore ARKive" mouse over option is available to browse by species groups, eco-regions, topics, geography, conservation status, by-age educational resources, games, tools, applications, and Google Earth. The membership component of "MyARKive" allows users to create playlists of content, save images and video, share, and personalize the content. The site provides educational resources based on age and lesson plans on specific species. ARKive's partnerships and content producers are reputable and the multimedia content is of high quality and consistent. There are options to "share" the resources to various Web 2.0 and social media tools, but they do not provide embed code to cut and paste the video into your personal websites.

ARKive has a partnership with Google Earth to place the species and its associated multimedia in a geographical context.[5] The site is organized according to species topic pages. On each species page there is a text entry with facts, embedded references, citations, threats, and definitions. The text resources are easy to navigate while the video or images are playing or explored. Species topic pages with connectivity to Google Earth have an option to "See where it lives." ARKive also provides an interactive portal and prompts users to download Google Earth's Internet plug-in.

The streamed video files are mp4 format, which works on mobile and touch devices. There are options to download in QuickTime and Windows Media formats. All content (images, video, text, and audio) is hosted by ARKive's servers. ARKive's technical partnership was with Hewlett Packard. Specifically, HP Labs collaborated with Wildscreen to design and develop ARKive, as part of HP Labs' Digital Media Systems program. HP developed a Media Production system for digitizing, cataloging, and tracking media assets and Media Vault with storage capacity around 74 Terabytes. Wildscreen Trust used commercial tools to develop the ARKive web sites. The Media Production system digitizes media to the highest quality available without compression. The Media Vault is used for storage, management, transcoding and preservation of digital media and corresponding metadata.[6]

As part of an overall project, ARKive is committed to preserving the media assets, which provides a high level of reliability for educators. It is helpful to know that these assets are being maintained for long-term use. The "Media Vault" is an open platform to store and manage the high quality media assets for preservation. A system of duplication, backup, and migration is in place, as well as services to re-encode media as preservation standards evolve over time. The encoding services provided by the Media Production system embed copyright information on the distributed media automatically in the form of a visual attribution to the donor and invisible information to enable tracking of the media.[7]

In an email to the author, Wildscreen representative Lucie Muir explained the process by which the content and videos are cataloged. Wildscreen relied on a staff of media researchers (all qualified biologists) to hand catalog and create descriptive metadata regarding the content, subject, and provenance of the media. The content was verified by the subject matter experts and the cataloging structure was defined by Wildscreen in consultation with other natural history experts. A standard tick list of categories, such as habit, habitat, feeding, and grooming, as well as other details specific to species are used to populate the categories.[8] Some technical metadata are captured automatically during ingest or edit of the media asset by the systems HP Labs created.[9]

In 2010, the Pew Internet & American Life Project, an initiative of the Pew Research Center, published "The State of Online Video." The study reported that since 2007, educational videos have experienced considerable growth, from 22 percent of online adults to 38 percent watching in 2009.[10] It will be interesting to see the next step Wildscreen Trust takes to develop this project and the initiatives surrounding it. Currently, there is a game application for use with mobile devices, but applications such as Smithsonian's LeafSnap and Project Noah are possible models for ARKive's next step. Ms. Muir's email also stated that they are already experimenting with QR codes at the Field Museum and they are currently in the process of an entire site redesign to ensure better usability on mobile and touch devices. They are also examining other avenues, such utilizing second screen technology.[11] Second screen technology allows for real time social media interaction or extended content from videos and images to a mobile device.[12] In March 2011, it was announced that ARKive and strategic partners would be given a grant of over a million dollars for "ARKive in Your Pocket," a mobile, audiovisual wildlife experience.[13] One of the project's technology partners is 3C Research, which supports and develops a system of "Intelligent Content Based Retrieval (ICBR)." ICBR's focus is on facial and gait recognition of wildlife, which would allow multimedia and images

to be cataloged automatically by an algorithm that recognizes the animal's facial features and movements.[14] With these possibilities and future technologies, ARKive has the bones to branch into a complex and interesting mobile application, as well as continue to develop its virtual interface, preservation, and wildlife conservation efforts.

A quick analysis of ARKive will give any user a critical perspective on their media literacy skills. ARKive is an excellent example of collective intelligence in a subject specific area. ARKive's site also forces the user to move from format to format to see their research goal in context. The user will quickly move from text, to video, audio, map, and taxonomy, all within one screen and with the ability to trust the content and the quality of the research provided. Overall, ARKive is an excellent resource for teaching, learning, and research, with a focus on media asset preservation, mobile delivery, and environmental conservation

Notes

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2. Wildscreen. "ARKive: Images of Life on Earth Information Sheet." http://www.wildscreen.org.uk/downloads/ARKive.pdf
3. See note 2 above.
4. See note 2 above.
5. See note 2 above.
6. Nelson, Andrew. Hewlett-Packard Develoment Company, L.P. "ARKive." http://www.hpl.hp.com/research/ssrc/services/publishing/arkive/
7. Nelson, "ARKive."
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9. Andrew Nelson from Hewlett Packard, email message to the author, March 30, 2012.
10. Purcell, Kristen. "The State of Online Video." Pew Internet & American Life Project. (June 3, 2010), http://pewinternet.org/~/media//Files/Reports/2010/PIP-The-State-of-Online-Video.pdf.
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