Land for Wildlife

Nature Photography Workshop

Kings Park
Biodiversity Conservation Centre
Fraser Avenue, West Perth

Thursday, 19th October 2006

Introduction

- This Nature Photography Workshop is being held for *Land for Wildlife* members in the Perth region to celebrate *Land for Wildlife's* 10th anniversary.
- For more than 100 years photography has:
  - played a major role in society, advertising and tourism
  - images of wilderness areas foster a greater appreciation of the conservation values of these areas.
- Photography plays a major part in the rapidly expanding information age.
- By using the right equipment and learning appropriate skills, anyone can improve their photography skills and develop a greater appreciation of the natural world.

A Brief Overview of Photography

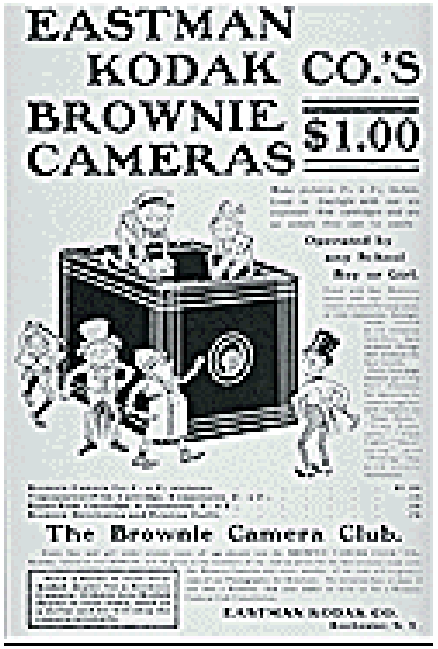
- **Camera obscura**
- A *camera obscura* is the earliest known, most simple camera.
- It is basically a pin-hole camera and the earliest models were just darkened rooms with a small opening in a ceiling, wall or window shade to allow light to enter and project an image of the view outside on to an opposite wall. It was used to observe solar eclipses and was later used by artists.

- Today there are numerous operating *camera obscuras* in various locations around the world. A well-known one is the San Francisco Camera Obscura which produces 360 degrees of live images magnified 7 times on a 6 foot Parabolic Table. It was built in the late 1940s and at one time was in danger of being demolished until it was added to the Register of Historic Places in 2001.

- Early photographing processing involved the use of bitumen-coated metal plates and emulsion-coated glass plates.
- **Film**
- In 1888 George Eastman perfected the process of flexible, plastic-based films. Kodak, marketed the No. 1 Kodak camera that contained a roll of film with 100 exposures at a cost of $25. The user would return the camera to the Kodak company which would process the film, print the images and return the freshly loaded camera to the user at a cost of $10.

George Eastman’s self-portrait on experimental film

- Kodak produced the first Brownie camera in 1900.
- It cost $1 and film was 15¢ a roll.



- The first digital camera produced by Kodak was the DCS 2 built on a Nikon SLR platform with a digital chip fixed in the camera's back. It produced a single shot, 4MB colour image and cost……..

$35,000!!

Nature photographers

- Early nature photographers such as Ansel Adams brought images of remote and beautiful locations in the USA to the general public, thereby encouraging greater appreciation and conservation of wilderness areas.

- In Australia, there are many well-known photographers who have has popularised images of nature, including Richard Woldendorp who has produced many fine images of Western Australia, particularly aerial photographs.

How old is the world's first photograph?

- This image of a 17th Century Flemish print featuring a boy leading a horse was made in 1825 by Joseph Niécephore Niépce using his heliography process.

- It was auctioned by Sotheby's in Paris on 21 March 2002 and had been expected to sell for around $600,000, but because the French government declared it a national treasure and banned anyone from taking it out of the country the photograph was bought by the Bibliotheque Nationale (French National Library) for a mere $392,000.

Equipment

- **Cameras**

- Although there is a huge range of sophisticated cameras on the market today, the five basic elements of a camera have changed very little over time, they are:

Lens	collects light and focuses the image
Diaphragm	the aperture that controls the amount of light entering through the lens
Shutter	determines the length of time the film or image sensor is exposed to light
Body	light-proof housing for the camera
Viewfinder	allows the photographer to see what is being taken, either through the lens in SLR cameras, or through a viewfinder in simple cameras.

- **Film**
- *Print film* when developed, turns into a negative with the colours (or black and white values) inverted. This film must be printed or projected through a lens to be viewed.
- *Colour reversal film* when developed, is called a transparency or slide and can be viewed directly using a projector. Reversal films are popular with professional photographers because the colour reproduction is generally superior to print films.
- *Film sizes* used for still photography are: 135 (popularly known as 35 mm), 110, 126, 127 and 120/220.

- ***Film speed*** describes a film's threshold sensitivity to light.
- The international standard for rating film speed is the ISO scale (previously ASA/DIN). Digital cameras use the same ISO numbering system even though they do not contain film.
- The higher the film speed number the more 'noise' or 'grain' in the image. Consumer print films are usually in the ISO 100 to ISO 800 range.
- Films of ISO 800 and greater are better suited to low-light situations and action shots where the short exposure time limits the total light received. The benefit of slower film is that it usually has finer grain and better colour rendition than fast film.

- **Lenses**
- Quality counts! Interchangeable lenses can be attached to SLR cameras and add to the flexibility of the camera.
- **Filters**
- Many filters are available for various purposes including:
- **UV, skylight** - counteracts blue cast on cloudy days
- **Polarizing** - reduces reflected light from surfaces, e.g. water and foliage, helps create stronger and brighter colours and makes blue sky darker. Requires approx. 1-1/2 stops extra exposure.
- **Colours** - enhances dramatic effect

- **Cable release**
- Reduces blurring due to camera shake, particularly for long exposures.
- **Tripod**
- Enables sharper images by reducing camera shake and assists with panorama shots.
- **Camcushion**
- A cushion that steadies the camera where a tripod is not appropriate
- **Bags and cases**
- There are many types and sizes of all-weather and underwater waterproof cases.
- **Cleaning**
- Blower brushes and cleaning cloths designed specifically for cameras.

Digital cameras

- Digital is rapidly replacing film as the photography medium of choice and digital cameras have continued to get cheaper.

- **Advantages of film are**
  - it is reasonably permanent.
  - Archival storage format - will last at least 100 years.
  - Good colour saturation.
  - Medium format film equivalent to a 50mp digital camera.
- **Disadvantages of film are**
  - Cost of film and processing
  - Waiting days or weeks for results, or to use up roll of film
  - Risk of X-ray damage in airports
  - Toxic chemicals used in developing process.

- **Advantages of digital photography are**
  - Low shooting and processing costs.
  - Instant results – see errors and rectify immediately.
  - Portability – images can be shared via computer and sent around the world in seconds.
- **Disadvantages of digital are**
  - Digital images may not last – back ups required.
  - Future technology requirements unknown.
  - Shutter lag, particularly with cheaper model digital cameras.
  - Batteries and memory may run out at inconvenient time.

- The basics to look for in a digital camera are:
- Resolution
- Optics
- Viewfinder
- Zoom
- Memory
- Flash
- Batteries
- Movie mode
- Special effects
- Picture transfer

- **Software**
- ***Photo editing software***

  Most digital cameras come with basic photo editing software.

- ***Things to look for when choosing a photo editor***
- Check system requirements – e.g. Photoshop Elements requires more disk space than Paint Shop Pro
- Look for two levels of use – beginner and expert
- More tools and features the better
- Templates
- Should be able to import and export a wide range of file formats e.g. BMP, TIF, GIF, PICT, EPS and JPEG. Some also support RAW image files.
- Web integration – enables you to save photos in web format and email or post on-line.

Composition

- Know your camera and understand the technology and you will take better photographs.
- Rules or guidelines?
- The rule of thirds consists of two vertical and two horizontal lines evenly spaced. Where the lines intersect are called “sweet spots”. “Rules” can be broken to provide interesting photographs.

- Perspective
- Viewpoint
- Focal point
- Foreground, background
- Frame
- Contrast
- Scale
- Horizon
- Light

- Camera settings
- *Exposure*
- *Aperture* controls light which passes through the lens and also helps to control the sharpness of the image. Sharpness is the depth of field, partly controlled by aperture
- *Exposure compensation*
- The Exposure Value (EV) adjustment allows you to lock in and use the camera's recommended automatic exposure setting
- *Bracketing*
- Bracketing is the process of taking several pictures, each with a slightly different exposure, so that at least one of them will turn out the way you want
- *Focus lock*
- With focus lock you can frame the main focal point, let the camera focus, lock the focus (usually by depressing the shutter button half-way), and then move the camera to get the composition you want.

- ***Macro/close-up***
- Most digital cameras have a macro mode. Use a tripod, a wide angle setting, ISO 400 and flash off.
- ***Zoom***
- A zoom lens lets you change the focal length of the camera – how much the camera magnifies the image. The bigger the zoom, the more you can enlarge the image. The lowest number of the zoom range indicates the wide angle rating, and the biggest number indicates the telephoto setting.

Output

- Downloading digital images
- Viewing images
- Calibrating your computer monitor
- Printing images

- **Editing technique – colour saturation and contrast increased**

Editing technique – horizon straightened

- **Virtual herbarium**

Photographic Monitoring of Vegetation

- **What is monitoring?**
- Monitoring is defined as the process of undertaking periodical assessments or surveys, recording the results, and periodically comparing and evaluating them to determine the effectiveness of actions or the progress of projects
- **Why monitor?**
- Monitoring helps us to understand how and why the land and its vegetation is behaving over time and to develop a better understanding of cause and effect in managing vegetation.
- For monitoring vegetation, either remnant vegetation or replanting, a simple yet very useful method is to take a series of photographs, called ‘photopoint monitoring’.
- **What is photopoint monitoring?**
- Photographic monitoring is a snapshot of a particular site at a particular time. “A picture tells a thousand words.”

- **When to use**
- After fire, storm, weed control, revegetation, fencing etc
- **Setting up the photopoint**
- Select and mark the site with a marker post, fence post, rock, or tree. Take a photo. Record details, e.g. date, time, weather, location, history of site, and reason for taking photo.
- Use a standard wide angle 50 mm camera lens so that the same camera settings are used each time.
- Photopoints are only one type of monitoring tool and a more detailed survey and recording can be done if time permits.