

Animal Husbandry Software for Australian Wildlife Carers

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Abstract

When caring for and rehabilitating native wildlife it is essential to keep accurate and comprehensive records. Perhaps just as important as keeping records is the sharing of the information that they contain with other wildlife carers. After many years of rehabilitating wildlife and relying on paper records and Excel spreadsheets I felt the need to improve this process and began the search for an animal record system that would serve the purpose. The obvious answer was ARKS which is used by the zoos, but to obtain a copy necessitated joining ARAZPA with its steep annual membership fees. The shareware domain offered very little and commercial products were designed with the emphasis on horse studs and pet shelters. Not to be deterred, and being by profession a software developer, I sat down and wrote a web based system designed specifically for wildlife carers. The result is the Online Animal Record System which is available free of charge to anyone who wants to use it. This presentation will discuss the need for record keeping and describe in detail the functions of the new internet based system. The front-end is standard HTML and PHP and includes login screens and comprehensive security features. The back-end processing uses a MYSQL database and includes the scientific and common names of all known Australian birds, mammals and reptiles. Tools are provided to estimate birth dates using the figures published in the ARAZPA Birth Date Determination manual, to calculate feed amounts for marsupials using Wombaroo, Divetelact and Biolac, and to calculate feed amounts for flying foxes being fed on NAN1 baby formula. Animal growth records are automatically plotted against the theoretical growth figures and reports are included to plot multiple animals on the same graph to compare growth rates. Being a web based application allows almost instantaneous sharing of information between carers. Animals can be transferred between carers with no loss or laborious re-entering of information. The system is designed to support multiple care groups simultaneously with

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personal details and animal records being protected by internal security mechanisms.

1 The Online Animal Record System

The maintenance of accurate animal records is an invaluable tool for the long term improvement of animal husbandry techniques for orphaned and injured wildlife. Some of the benefits that it can provide include:

- Improved birth date determination
- Early detection of abnormalities
- Improved statistics on survival rates
- Increase leverage on government bodies
- Detection of changes in types and numbers of animals coming into care
- Sharing of diagnosis, treatment & recovery information

The Online Animal Record System was developed initially to maintain the records for the Long Grass Nature Refuge. Despite trialling several different products no reasonably priced software, designed specifically for wildlife rehabilitators could be found. With broadband internet connections becoming widely available and with members of wildlife care groups often distributed over wide areas, the use of the internet for access to wildlife records seemed to be the logical solution. The system has now developed into a fully fledged information database and record keeping tool for Australian wildlife carers.

The current web based version is available free of charge to anyone who cares to use it. It can be used from the Long Grass website or can be installed on your own website, and we make no restrictions other than that you must not charge for its use, and you must acknowledge Long Grass Nature Refuge in any copies of the system that you pass on to others.

Towards the end of 2006 I hope to have a stand-alone version of the system available for those without internet access. This version will allow you to maintain records on your own PC, and if desired, synchronise those records with the web based system when an internet connection is available.

The record system has built in to it, the common and scientific names of all Australian native species, with the exception of the reptiles which I have not finished entering. It also contains much of the growth data from the ARAZPA publication, "Birth Date Determination in Australasian Marsupials", which allows

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us to determine the theoretical growth curves for a large number of species. Unfortunately many species do not have any published accurate or complete growth data (there appears to be nothing published for Australian birds). In many cases the available data does not distinguish between males and females (the Red kangaroo is a notable example) and makes no allowance for differences in geographic location. For example, the several sets of growth figures for the common brush-tailed possum vary by large amounts in the weight for age figures and based on personal experience are not accurate for unfurred possums. The figures for Eastern Grey kangaroos on the other hand appear to be complete and accurate. As more data becomes available it will be added to the internal growth tables. Incomplete as they are, these theoretical growth figures are used by the "Birth Date Estimator" tool that can be launched when adding an animal, or can be accessed separately from the Tools menu.

1.1 Component structure

The individual components of the Online Animal Record system will not be described in this paper but will be demonstrated in detail during the presentation. In broad outline the system comprises the following components:

- Individual Animal Records
 - Birth Date Estimation
 - Growth History
 - Carer history
 - Health history
 - Diet History
 - Release History
 - Post Release Monitoring
 - Photo Gallery
- Carer details
- Care Group details
- Release Site details
- Tools
 - Birth Date Estimation
 - Flying Fox Feed Calculator
 - Wombaroo Feed Calculator
 - Latitude/Longitude Converter
 - Real Time Tracking
- Reports
- Telephone Logs

These components will be discussed individually during the presentation. The following examples are intended to demonstrate what can be learned from the automatic plotting of growth curves for animals in care.

For those not able to attend the presentation it will be made available on our website www.LongGrassSystems.com.au/NatureRefuge under the “Animal Records” tab at the completion of the conference.

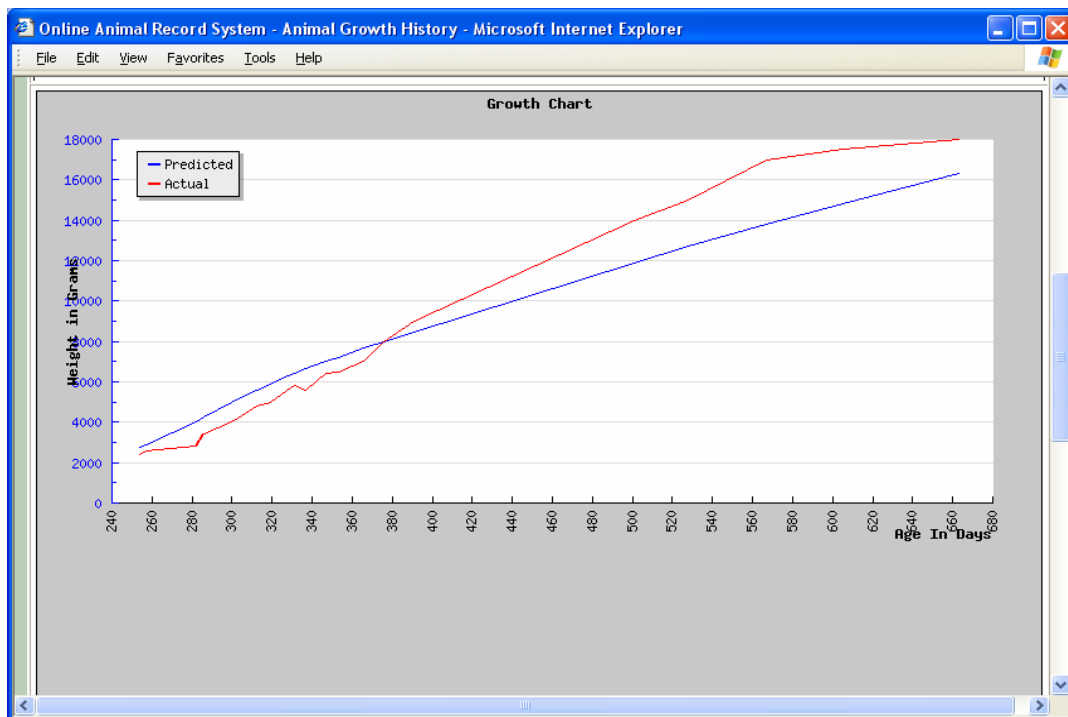
1.2 Some Examples of growth charts

The following growth charts are from real animals and show:

- An eastern grey kangaroo fed on Wombaroo
- Two eastern grey kangaroos fed on Divetelact
- An eastern grey kangaroo with unknown disorder

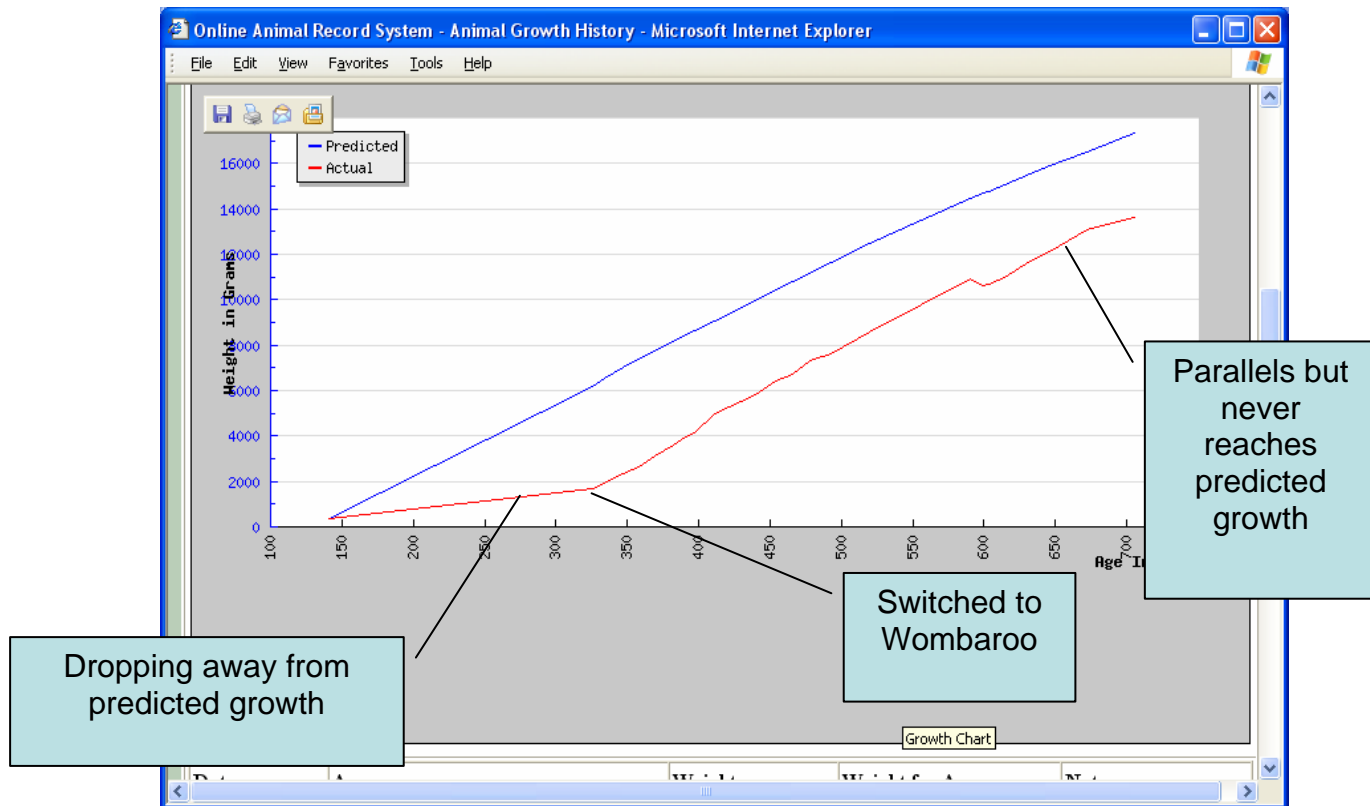
1.2.1 The effect of different milk replacement formula on growth

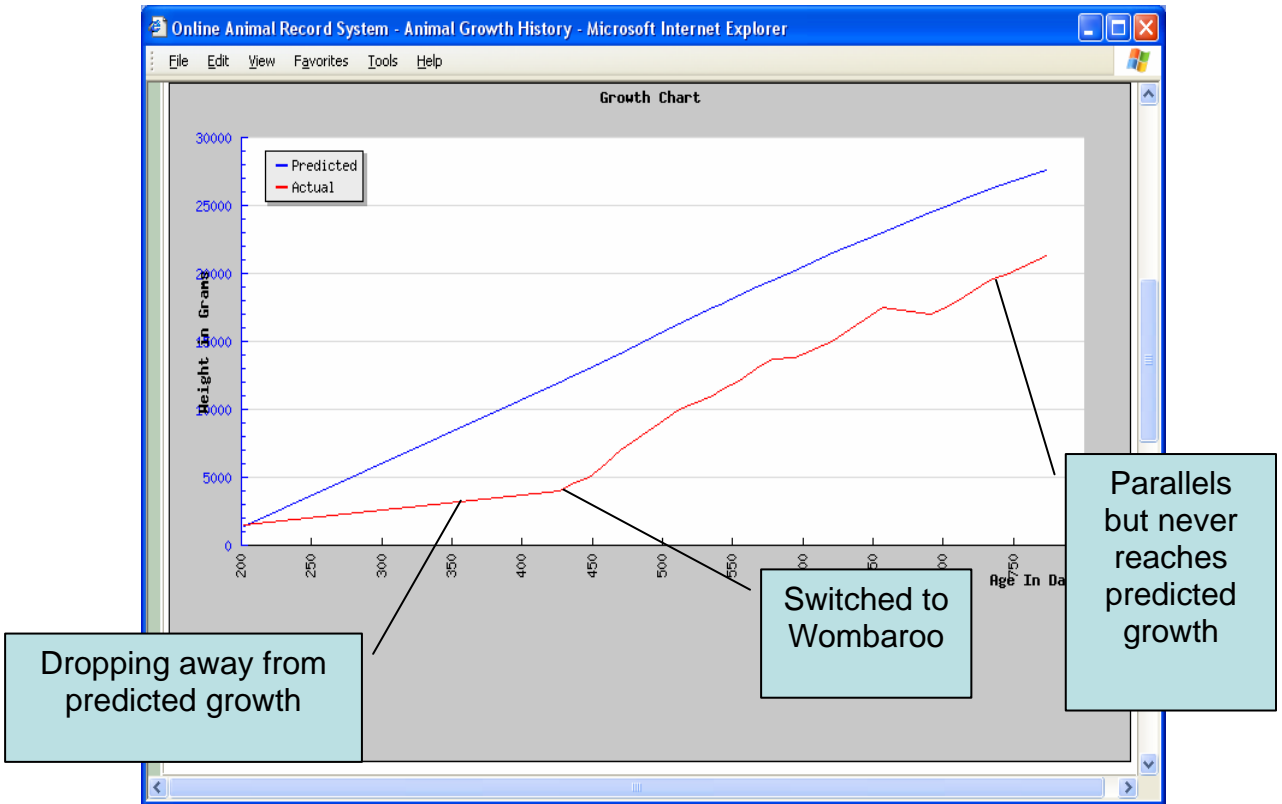
This first graph is from an Eastern Grey kangaroo exhibiting a normal growth pattern having been fed on Wombaroo from the time it entered into care.



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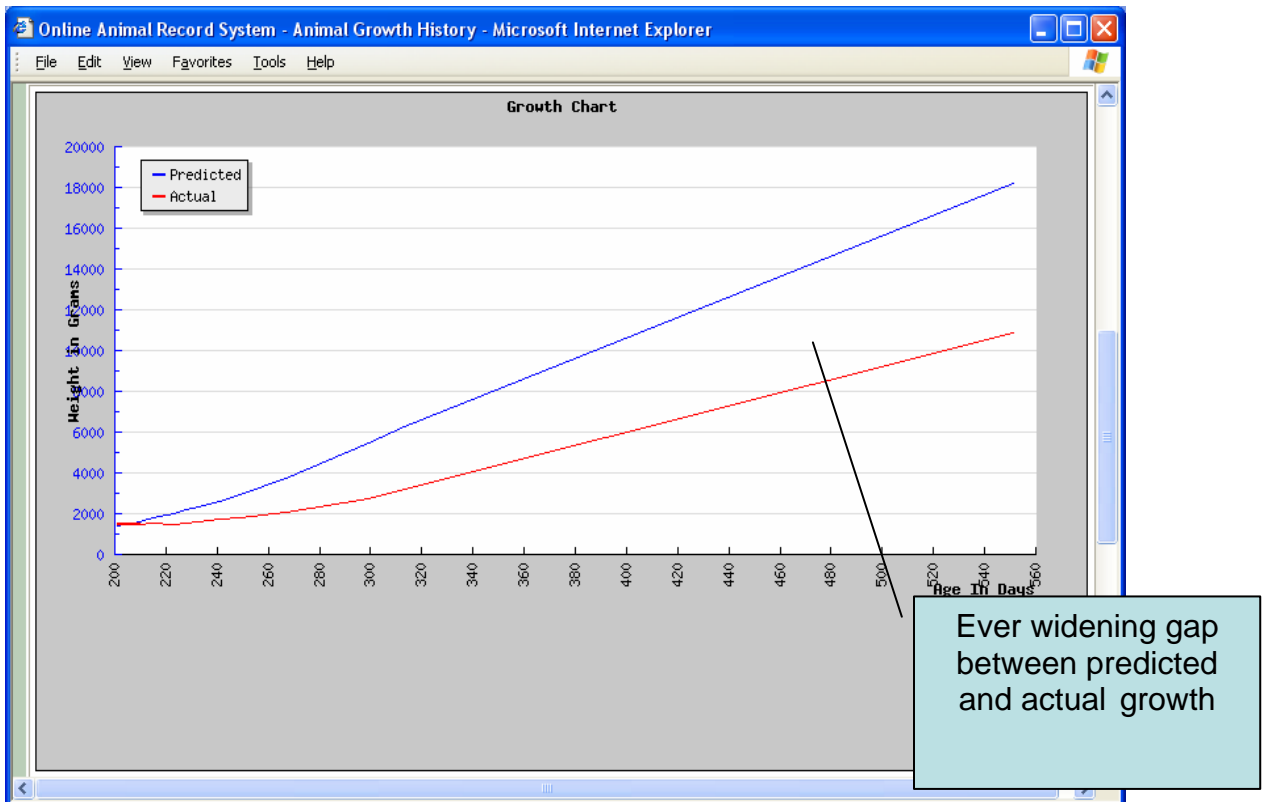
The next two graphs are from Eastern Grey kangaroos that were initially fed on Divetelact and were switched to Wombaroo when nearly 12 months old. The change to Wombaroo arrests the decline in growth and the animals then parallel the expected growth line but never catches up to it. My experience is that animals fed on Divetelact for an extended period are smaller and less robust than those fed on Wombaroo. The pattern shown in this graph is typical of kangaroos raised on Divetelact and later switched to Wombaroo.





1.2.2 Detection of irregularities in growth

This chart is from an Eastern Grey kangaroo that came in with an undiagnosed digestive disorder. We have had several animals come in with growth curves like this and in all cases they have eventually died. Early detection of irregularities like this could perhaps have saved these animals.



2 Availability

A demonstration of the full system can be accessed on the internet at www.LongGrassSystems.com.au/AnimalRecords . When prompted to login enter Guest as the userid and leave the password field blank. Animal names will appear as numbers and no updates will be possible when using Guest access.

Any enquiries or suggestions please send an email to PDRichards@Bigpond.com.

I am sure that there are still a few bugs in the system and I am always open to new suggestions and recommendations, so if you find any errors or have any ideas for improvements or enhancements please let me know.

The stand alone, non-web based version will be available towards the end of 2006.

And remember, this system is provided totally free of charge in the hope that it will improve the way that we care for our orphaned and injured wildlife.