

Chewing the Cud 2016

Structure, Structure, Structure, Finding the Balance Between Livestock and Reptiles



Introduction

- Richard Sharp - I have been developing ARC's grazing in Dorset since 2008; started in 1995 on the downs of Bedfordshire.
- Talk will be focusing on reptiles but also a general biodiversity approach to grazing management
- Will look at ARC's model for general grazing and how the techniques can be used in a downland context through 3 examples

Reptile Ecology

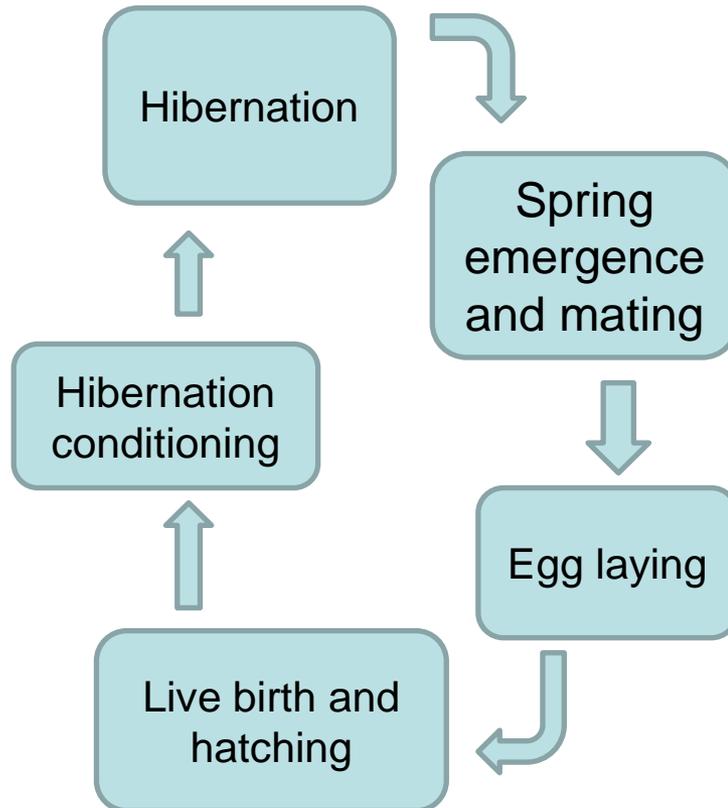
- Need for thermoregulation; both heating up and cooling down requires well structured and diverse habitats
- Successful hibernation requires a stable environment
- Spring emergence is a time of low energy stores vs. high expenditure in mating.
- Live birth/ egg laying requires large amounts of energy and the use of open spaces.
- Change in prey items over lifetime requires well structured habitat with many ecological niches.



The Reptile Year

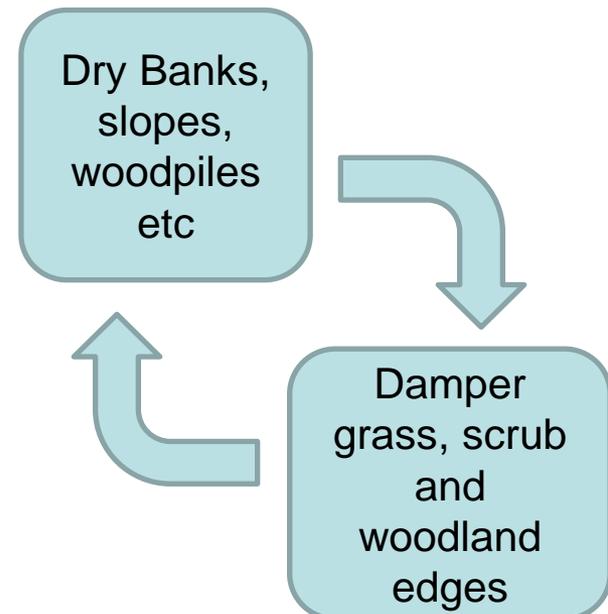
Animals

Have a yearly cycle with different habitat and bodily requirements.



Habitat use

Grasslands can contain diverse habitats with subtle interfaces between them, providing varied choice for reptiles.



Grazing and habitat structure

- Grazing can produce well structured micro habitats but also easily reduce/ homogenise structure in an eco system.
- Seed dispersal by grazing livestock can change habitats over time.



Missing Structure

- Diverse habitats and ecosystems are well structured with lots of different niches and levels.
- Reduce structural diversity and lose species
- New Forest has lower density of predator species (birds of prey) and/or lower density/ missing invertebrate communities compared to similar adjacent ungrazed habitats.



Rory Putman Effects of grazing on ecological structure and dynamic of the New Forest 2010
Biodiversity in the New Forest 2016



Grazing for reptiles – an ARC model

Well planned but flexible with suitable objectives

Matching animals to objectives

- A poor match will lead to animals, sites or both being pushed past what is best.

With cattle being the only livestock easily available ARC are working on an objective;

“Manipulation of grass beds and dwarf shrub species to increase structural diversity through the grazing, movement and lying up of animals.”

Numbers

- Start small! Numbers can always be increased if your objective is not being met.

ARC are working to keep the number of animals on site as close to 0.1 LU per ha (1 LU = 1 Adult Cow).

So a 100ha site would have 10 animals as a starting point for a years grazing.

Adjusting stocking density up or down relies on an assessment of the sites ability to support stable reptile populations – habitat types, present habitat structure.

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Grazing for reptiles – an ARC model

Timing

A complicated question and will be influenced by how your regiem is set up, your objectives and the outcome for the livestock.

- Taking reptile conservation as our overriding parameter ARC definitely avoid late winter, spring and possibly early summer.
- Late summer/autumn and into early winter are preferred. We are looking to get livestock on site post hatching/birth so all reptiles are mobile.

Monitoring

Is all important, annually and long-term. Looking at both habitat structure and changes as well as trends in reptile numbers.

ARC are using two methods;

- A simple grazed/un-grazed comparison survey to look at reptile numbers and use over time.
- A targeted risk assessment looking at actual grazing impacts on vegetation structure.



In Summary

Reptile Ecology

- Reptiles have a complex ecology requiring well structured but differing habitats through the year and over a life time.
- Most reptile species will use a range of the habitats available on a site over a year; with scrub and damper grasslands being particularly important over the summer, especially for the widespread species.
- Reptiles are potentially vulnerable to excessive habitat change and /or disturbance late winter into spring.

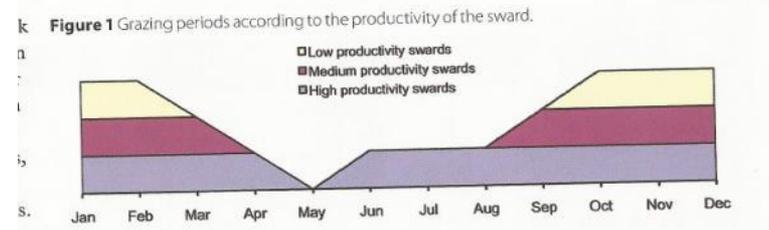
Grazing Management

- Timing and stocking density critical to managing grazing for reptiles
- Features of reptile interest can be created by but also attractive to grazing livestock – bare earth, tracks, ponds, dry areas.
- Structure important for species diversity and can easily be degraded.
- Need to know species present to get balance right between species and livestock grazing.



Winchester Hill

- 61 ha of downland and scrub/woodland
- Set of 5 principles used to identify swards and define grazing management
- Use of timing to obtain beneficial outcomes for grazing and sensitive species
- Annual monitoring of invertebrates and plants
- Only disagreement from a reptile point of view – grazing in any compartment continued until all herbage eaten



Salisbury Plain

- 3800 ha of Salisbury Plain
- Military training area – 8ha paddocks with temporary electric fence.
- Very high stocking density but frequently moved before herbage completely gone.
- Never moved to an adjacent plot
- Areas of high wildlife value (Marsh fritillary) – grazed 1 year in 3



Paul Toynton Stock management for site managers – part 2
Conservation Land Management Spring 2012 vol. 10 nos. 1

Germany

- 90 ha site of dry calcareous grass and scrub
- Year round grazing (konnick ponies) at a low stocking density 0.2-0.3 LU/ha
- No compartments – so free roaming over site
- Ground nesting birds + orchid populations either remained stable or improved
- Negative affects on structure and species mitigated by low stocking density



Year round horse grazing supports typical vascular plant species, orchids and rare bird communities in a dry calcareous grassland.

Martina Kohler et al 2015

Journal of Agriculture, Ecosystems and Environment

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In Summary

- Planning and assessment essential when mitigating grazing for sensitive species.
- Achievable objectives critical
- “Less is more” is a good maxim.
- Be as flexible as possible in your approach to each site.
- Timing is critical.
- Monitoring is crucial to achieving success in mitigating any effects from habitat management especially grazing.
- Combined approach to management with grazing as part of a suite of management tools used.
- Species not confined to certain habitats – all have complex ecologies reliant on many aspects.



Thank You

Photo Credits;

Paul Edgar – Heathland fence line

Richard Sharp – Cattle

Chris Dresh – Adder

Nick Moulton – Structure View

Tony Gent, Neal Armour-Chelu –
downland scenes

Thanks to Gary Powell and Jon
Crewe.



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