

A photograph of a desk setup. In the foreground, a spiral-bound notebook is open, showing two blank pages. The words "Self-propelled", "Science", and "Reporting" are printed in a blue, serif font on the right page. To the left of the notebook is a fountain pen with a light-colored, textured barrel. Above the pen is a small, dark inkwell with a white label. In the background, two silver and black ballpoint pens are lying horizontally. The entire scene is set against a light-colored wooden desk surface, which is framed by a solid blue border.

Self-propelled

Science

Reporting

Nested Questions and Answers for this talk

QUESTION

ANSWER

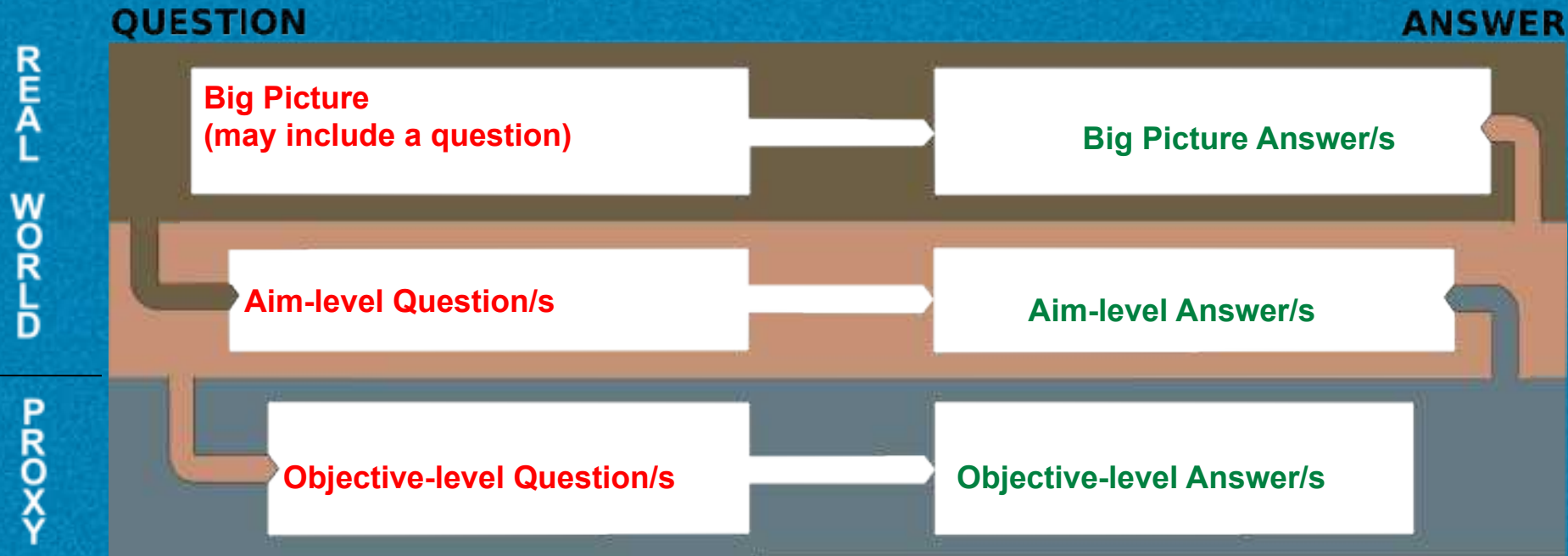
Can we humanize science reporting?

Can we break it down into manageable tasks that have a natural, motivating force aligned with whole task?

Can we find an overarching axis or framework such that point-to-point movement has a consistent forward momentum?

Nested
Questions and Answers

A truly motivating framework: Nested questions and Answers



NB: Aim-level question must be one audience sees as:

- unanswered in literature (novelty)
- significant

A sample talk based on this framework

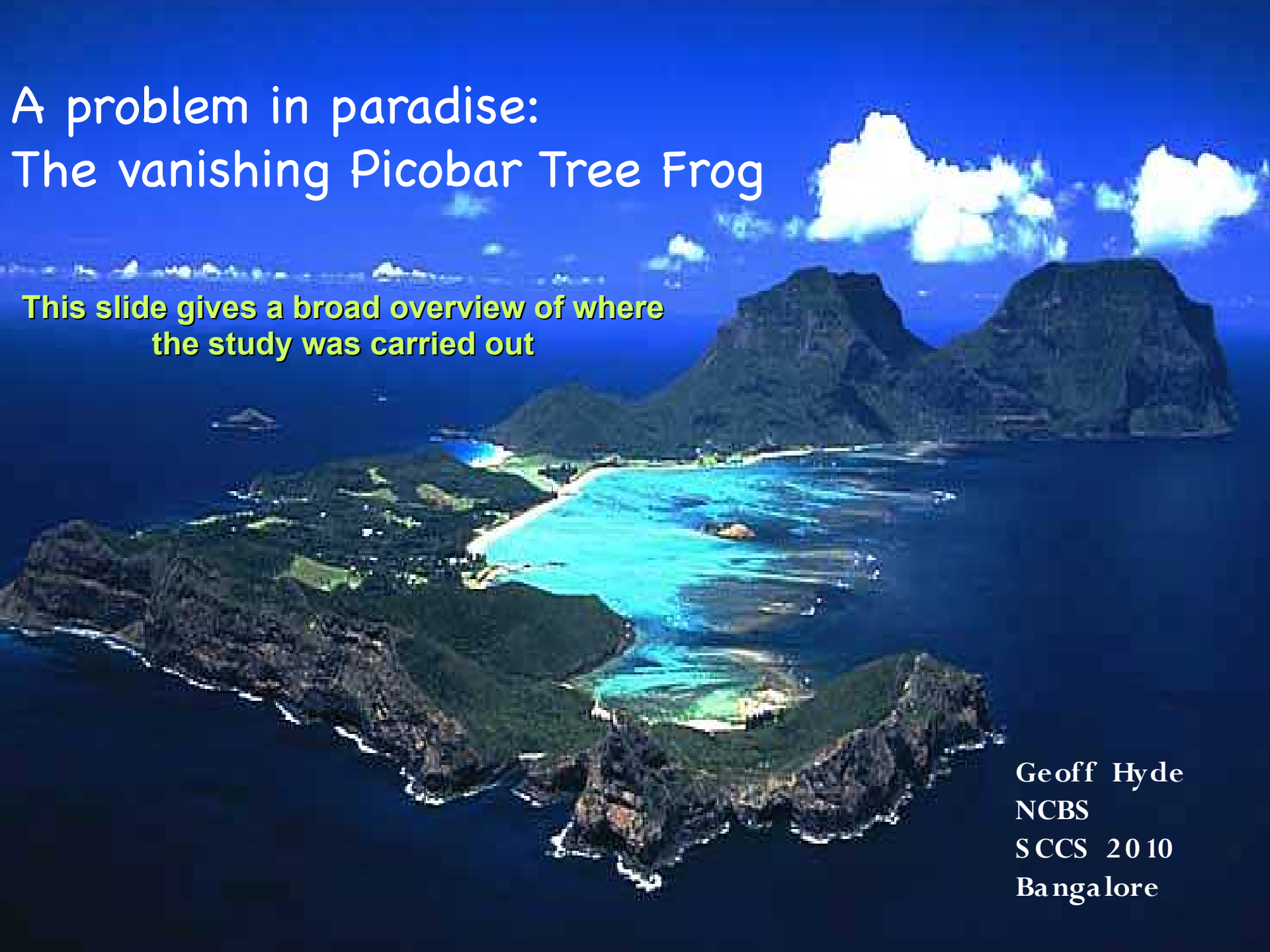
The next 22 slides present a fictional study on an endangered frog species on the fictional island of Picobar.

It is designed to show how the Question and Answer framework can be used as the backbone of a talk.

While there is no commentary, explanatory comments on what is being attempted in each slide are inserted in **YELLOW text**.

A problem in paradise: The vanishing Picobar Tree Frog

**This slide gives a broad overview of where
the study was carried out**



Geoff Hyde
NCBS
S CCS 2010
Bangalore



**This slide introduces the
incredible biodiversity on
Picobar**

Species Unique to Picobar

346 plants

209 insects

37 birds

14 mammals

11 reptiles and amphibians

This slide narrows the focus to one
(endangered) aspect of Picobar's
diversity

The Picobar Tree Frog



Diurnal
Insectivorous
Mid-altitudes
Population declining

This slide asks a “Big Picture” level question about the Picobar Tree Frog

How can the population decline of the Picobar Tree Frog be managed?



Possible players in the population decline of the Picobar Tree Frog



Rat Snake
(*Ptyas mucosa*)
Introduced 1999



This slide narrows the focus yet again: out of all the possible ways to manage the Tree Frog decline the authors are interested in determining *the cause* of the decline.



Picobar Lady Beetle
(*Harmonia picobari*)
Population reduced by fungal infection

Is population decline due to increased predation or decreased prey?



In this slide, the authors clarify the aim-level question.

Like most aim-level questions it is a question of “real-world” significance, that the authors believe the audience will be interested in knowing the answer to.

If increased predation,



This slide begins a *justification* for the appropriateness of the objective-level question that will come in the following slide

.....,we should see snakes eating frogs

This slide completes the *justification* for the appropriateness of the objective-level question and announces the question



Objective 1: Do starved captive rat snakes eat Picobar Tree Frogs?

Like many objective-level questions, this objective addresses an artificial situation. The audience hopefully accepts it as a *means* to an important end: answering the aim-level question

If decreased prey, frogs should strongly prefer Lady Beetles



This slide provides a *justification* for the appropriateness of the second objective-level question (following slide)

**Objective 2: Do starved, captive
Picobar Tree Frogs
strongly prefer
Picobar Lady Beetles ?**

**This slide announces the question that was justified in
the last slide.**

**Like many objective-level questions, this objective
addresses an artificial situation. The audience hopefully
accepts it as a *means* to an important end: answering the
aim-level question**

Preparation for exposure to frogs



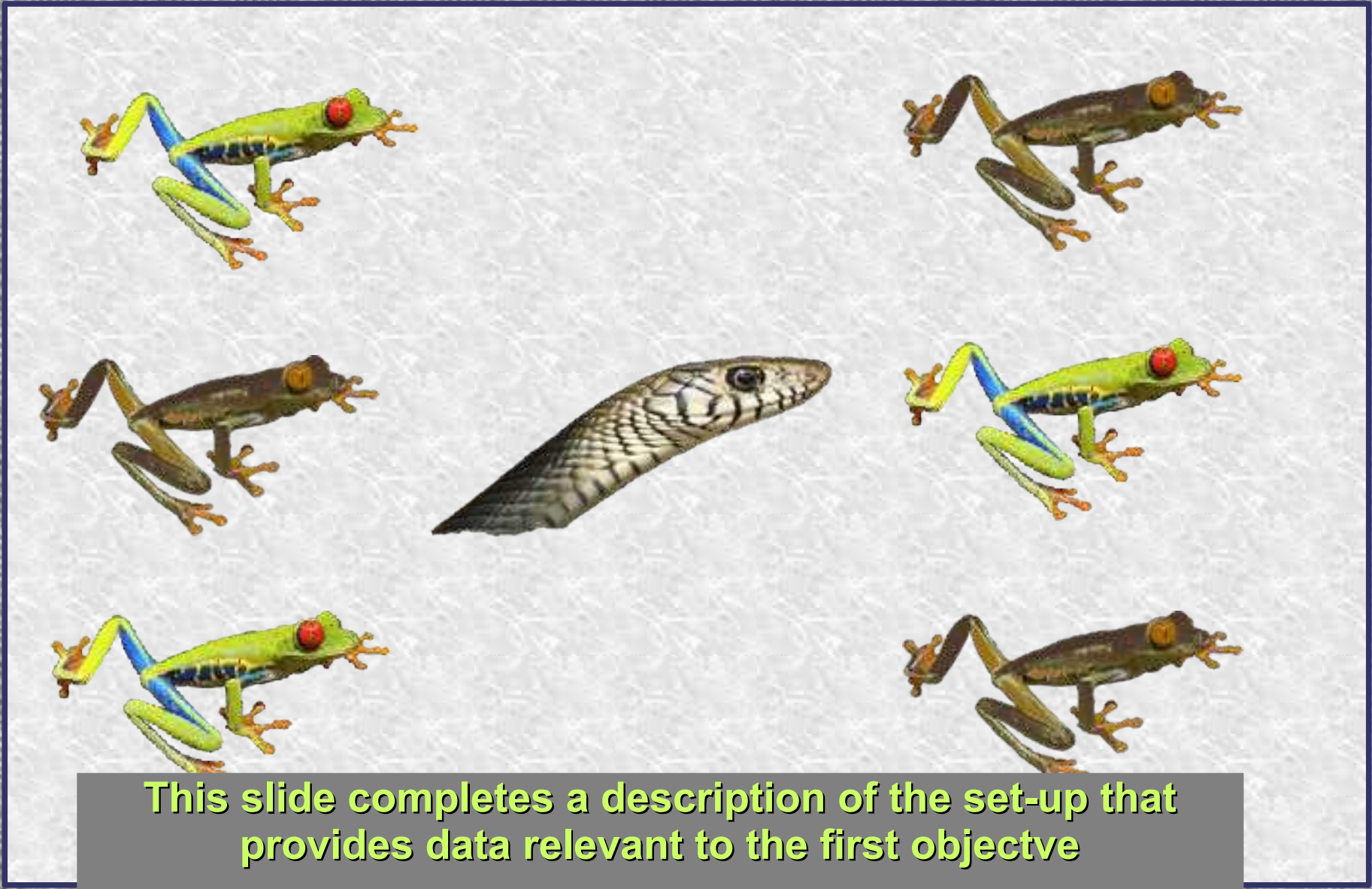
27°C + 36°C



This slide begins a description of the set-up that provides data relevant to the first objective

Replication : 20 snakes

Snakes offered two species of frogs



This slide completes a description of the set-up that provides data relevant to the first objective

Snakes ate the brown frogs



This slide provides
some of the data
relevant to the first
objective



Tree frogs uneaten after one week



This slide provides the rest of the data relevant to the first objective

Objective 1: Do starved captive rat snakes eat Picobar Tree Frogs?

No

This slide provides the answer to the first objective

Preparation for exposure to insects



27°C

JANUARY 2009

SUN	MON	TUE	WED	THUR	FRI	SAT
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						



This slide begins a description of the set-up that provides data relevant to the first objective

Replication : 20 frogs

Frogs offered five species of insects



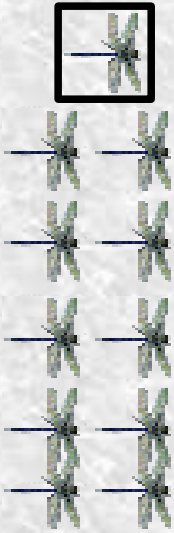
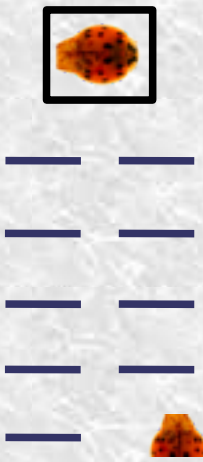
This slide completes a description of the set-up that provides data relevant to the first objective

Frogs targeted the Lady Beetles



This slide provides some of the data relevant to the second objective

95% Lady Beetles, 25% Brown Beetles eaten



This slide provides the rest of the data relevant to the second objective

Objective 2: Do starved, captive Picobar Tree Frogs strongly prefer Picobar Lady Beetles ?

Yes

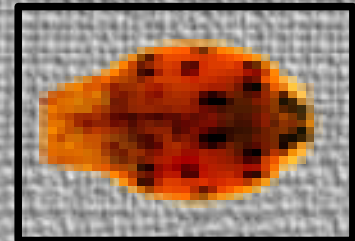
This slide provides the answer to the second objective

Is decline of Picobar Tree Frogs due to increased Rat Snake predation or decreased availability of Lady Beetles?

* Very unlikely due to Rat Snakes



* Results support Lady Beetle hypothesis
- need support from field studies
- preliminary data is suggestive



This slide recapitulates the Aim-level question (title of slide) and then addresses the relevance of what happened in the artificial world (captive frogs) to the real world (frogs in the forest)

Suggestions for management of population decline



- * Breed fungal-resistant Lady Beetles
- * Captive breeding program for tree frogs

This slide (FINAL SLIDE) addresses what the aim-level answers (from previous slide) suggest as plans of actions (i.e. *answers*) relevant to the Big Picture question

Nested Questions and Answers for the talk

QUESTION

ANSWER

How can we manage the decline of the Picobar Tree Frog?

- * Breed fungal-resistant Lady Beetles.
- * Start captive breeding program for Picobar Tree Frogs.

Is Picobar Tree Frog decline due to Rat Snake increase or Lady Beetle decrease?

Captive results consistent with a role for Lady Beetle decrease in Picobar Tree Frog decline.

- * Do captive Rat Snakes eat Picobar Tree Frogs?
- * Do captive Picobar Tree Frogs strongly prefer to eat Lady Beetles?

- * Captive Rat Snakes do not eat Picobar Tree Frogs.
- * Captive Picobar Tree Frogs strongly prefer to eat Lady Beetles.

Devices for focusing on Aims: Talks



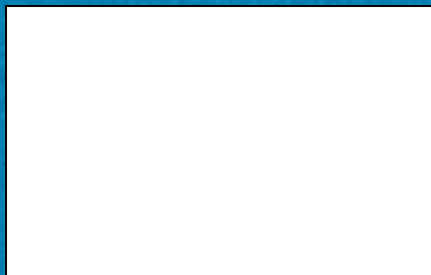
Introduction

1. Big Picture Question

2. Aim-level Question/s

3. Objective-level Question/s

Methods



Results

3. Objective-level Answer/s

Discussion

Remind reader of
Aim-level Question/s

2. Aim-level Answer/s

1. Big Picture Answer/s

Emphasise importance: tone, pausing, dedicated slide

Change to less emphatic tone

Recapitulate