National Forest Demarcation and Bio-Physical Resource Inventory Project

Biological Inventory

Matt Morton FCG International / Durrell Wildlife Conservation Trust

Biodiversity Surveys 2009



Reptiles & Amphibians



Mammals



Insects



Birds





Biodiversity Surveys 2009



Dr Jenny Daltry Reptiles & Amphibians



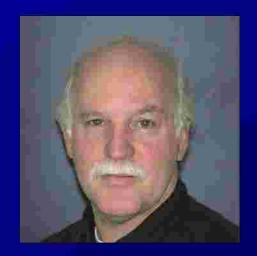
Mr Adams Toussaint Birds



Dr Frank Clarke Mammals



Mr Roger Graveson Plants



Prof Mike Ivie Insects

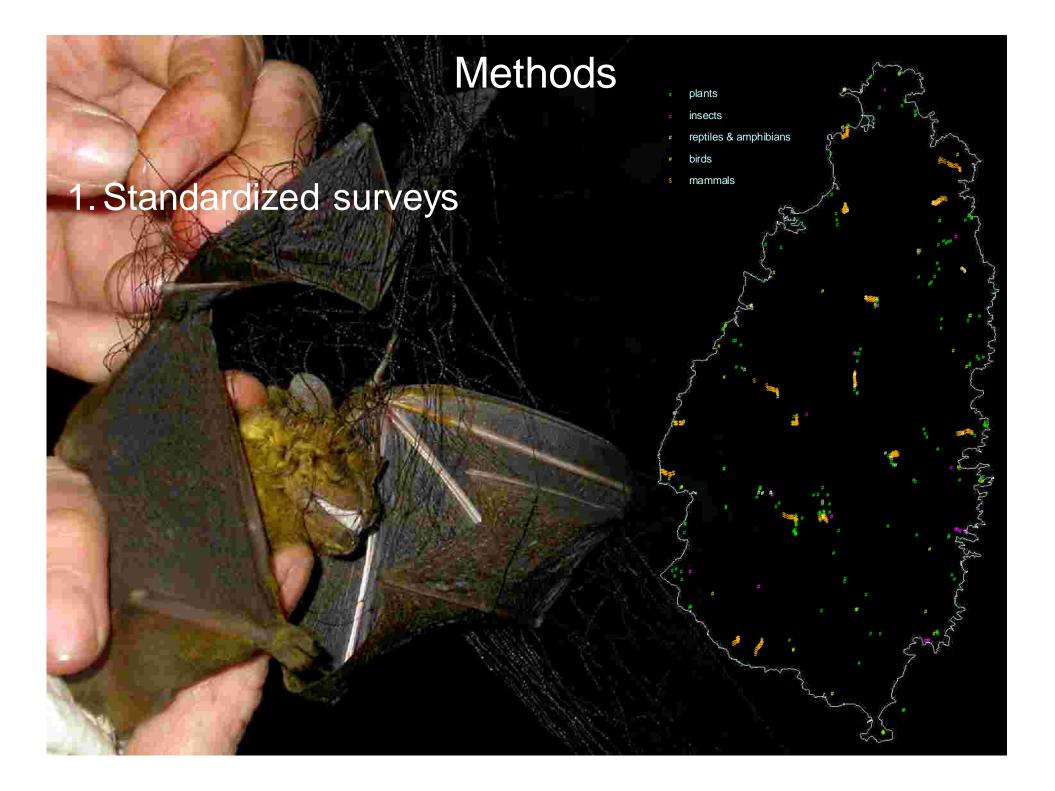


Mr Matthew Morton Critical Species

Aims

A classification and map of forest types nationwide.
 A 'biodiversity inventory' and species distributions.
 Provity species and torest areas.
 Assessment of wildlife use.
 Recommended management actions.
 Upgrade the herbarium

7. Training on research methods.



Methods

Standardized surveys
 Opportunistic records

Methods

Standardized surveys
 Opportunistic records
 Questionnaires and interviews

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Introduction

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The St Lucia whiptail lizard Cnemidophorus vanzoi: a conservation dilemma?

Richard P. Young, John E. Fa, Agnieszka Ogródowczyk, Matthew Morton. Stephen Lesmond and

Walton W Took

Abstract Uncertainties in species definitions can have innormation sequences for biodiversity conservafor Lecture wear of it mark is under an a marker to assess the course film r worth is if the same of a ga isms. The Vulnerable St Lucia whiptali lizard Cnemidaphorus canzol, considered a single species is the sole representative of its genus in the Caribbean r g in f and a Write Maya and Maria Miner Islan's of the roat of S as an chorever, a e en tray ravealed significant morphological and paylogs ic differences between the two populations and recommended they should be managed as two separate entities. We surveyed the two populations and on Maria Major and At. H. LAP & ive & The sy stia

The prioritizing of species for conservation management relies on species definitions and lists, which conservation biologists tend to perceive as accurate measures of biodiversity. Uncertainties in species definitions can therefore have negative impacts on biodiversity conservation because taxonomic rank is an important criterion in assessing the concervation priority of an endangered organism (Goldstein et al., 2000). When cryptic evolutionary partitions are discovered in threatened species these findings are heralded as a positive step in the conservation process (Karl & Bower, 1999). Taxonomic uncertainty is, however, a consequence of evolution and the very nature of a classification into units called species defies the dynamic nature of evolutionary processes. For species management to be more efficient, therefore, the difference between units

Remand P. Vorung, Julius E. Far (Certesponding = myz1, Apple 5288 Ogrodosczyk, Matthew Morton and Stephan M, Funk Durres Wildsen Conversion Trust Les Augure Marie, Treffy, Jessey, 33 559, UK Channel islands. E-con Justidural ora

Stepron Learning Department of Frankling Ministry of Agriculture, Flinkling and Fasteries, Dastring, St Lucin,

Received & April 2023 Revision to be line 16 September 2005 Accepted to January 3006

Minor population is currently at a critically low level and consequently highly susceptible to demographic and genetic stochasticity and catastrophic events. in E-ticular the colonization of invasive mammalian predators. If our goal is to conserve biediversity and evolutionary potential we face a dilemma in formulating the optimum strategy for the management of these two threatened populations on the species boundary. We C'se to stant of tent'al management options but also It list this same of $\lambda^{\frac{14}{3}}$ at is on in the convertion biology community.

Keywords Caribbean, Chemidophorius mutzoi, cryptic species, distance sampling, islands, speciation, St Lucia whiptail lizard, translocation.

for taxonomy and units for species conservation should be recognized and their definitions descupled (Mace, 2004)

The St Lacia whiptail lizard Coemidophorus cancel (Baskin & Williams, 1966), considered a single species, was until recently found only on two neighboraring small islets, the Maria Islands, c. 1 km off the south-cast coast of St Lucia (Fig. 1: Dickinson & Fa, 2000). The 10.6 ha Maria Major is heavily vegetated with dry scrub woodland and large stands of cachi. The adjacent Maria Minor (1.6 ha) consists largely of open grassiand with an area of scrub woodland of <0.5 ha. Both islands are uninhabited and were designated as a nature reserve in 1982. The whipted lizard is the sole representative of its genus in the Caribbean (Swartz & Menderson, 1991) and is categorized as Vulnerable on the IUCN Red List (IUCN, 2006). In 1995, 42 animals were translocated from Maria Major to another St Lucia islet. Praslin Island, to found a third population and thus increase the species' distribution (Dickinson & Fa, 2000). The 1.1 ha Praslin Island, which had been recently cleaned of rats Rattus rattus (Johnston et al., 1994), is thought not to have supported the species in recent times. By 1968 the population had grown to c. 155 (Dickinson & Fa, 2000). Following the release, mean offective population size

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Standardized surveys
 Opportunistic records
 Literature searches
 Questionnaires and in eviews
 Auxiliary data

Methods

Bridled quail dov

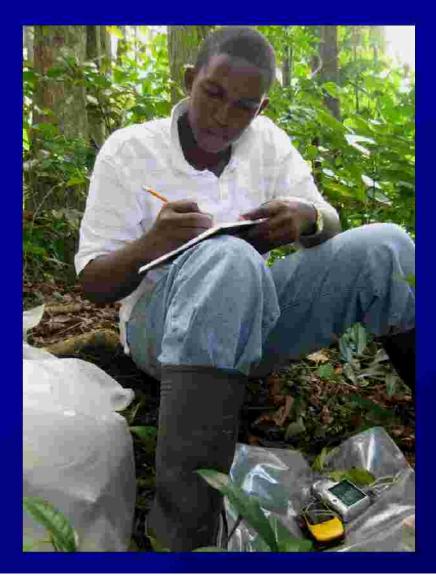
Grey trembler

Great blue heror

Outputs 1. Staff trained on research methods



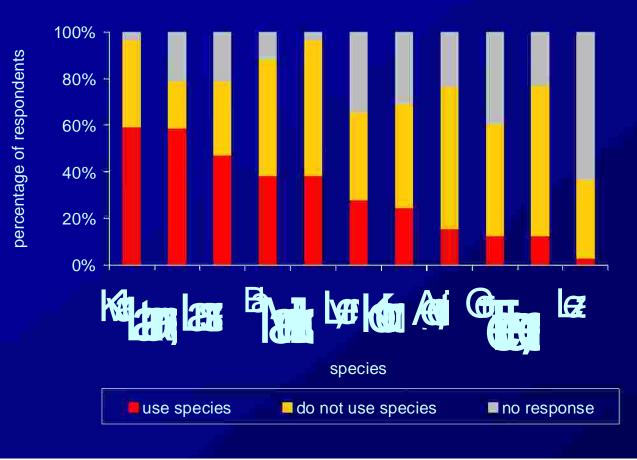
Outputs 2. Herbarium upgraded





Outputs 3. Information of how Saint Lucians use wildlife

Over 200 people interviewed





Outputs 4. Forest Classification and Map



defined and mapped

Natural Forest Littoral Evergreen over the Chrubland Mangrove Freshwater Swamp Forest Deciduous Seasonal Forest

Semi-natural Forest Tree Plantations

Non-Forest Elfin Shrublands Herbaceous Swamp Aquatic Herbaceous Vegetation Littoral Rock and Cliff Vegetation Semi-evergreen Seasonal Forest Lower Montane Rainforest Montane Rainforest Cloud Montane Rainforest

Littoral Unconsolidated Sand Vegetation Littoral Scrub, including Cacti Fumarole Vegetation Grassland, with or without trees or shrubs

Outputs 5. Inventory: Saint Lucia's biodiversity

NATIVE SPECIES

Plants Birds Reptiles Amphibians Mammals **Beetles** Other insects

945 species of 'higher plants' 137 species of ferns + mosses ~ 60 resident species **17** species 2 species 10 species > 200 species > 1,000 species

Outputs 5. Inventory of Saint Lucia's biodiversity

Saint Lucia has an exceptionally high number of endemic species and subspecies compared with other islands in the region.

ÜNIQUELY SAINT LUCIAN



Outputs 5. Inventory: Saint Lucia's biodiversity

Plants Birds Reptiles Amphibians Mammals

Beetles

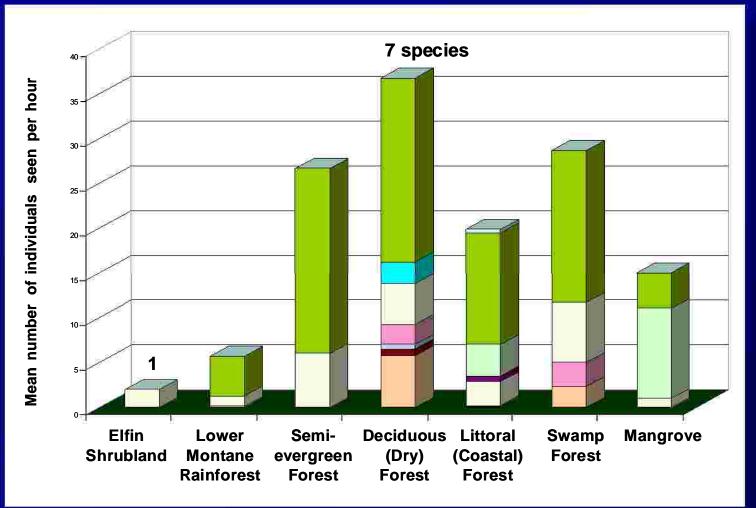


9 species
5 species 11 subspecies
7 species 5 subspecies
1 species 1 subspecies
(extinct)
> 200 species





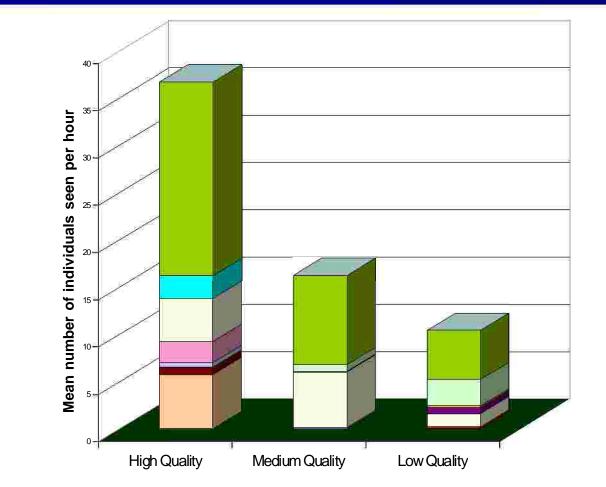
REPRESENTATIVE



REPRESENTATIVE

Priority species	Forest type	% number of species	Status
Great blue heron	herbaceous swamp	6%	Species population not in Forest Reserve (38%)
Saint Lucia nightjar	deciduous seasonal forest	19%	
Saint Lucia wren			
White-breasted thrasher			
Lesser Antillean saltator	deciduous seasonal forest and semi-evergreen seasonal forest	13%	
Saint Lucia warbler			
Rufous-throated solitaire	montane rainforest	19%	Almost entirely in Forest Reserve (19%)
Semper's warbler			
Saint Lucia Amazon			
Bridled quail dove			
Forest thrush	deciduous seasonal forest, semi- evergreen seasonal forest and montane rainforest	44%	Part of species' population in Forest Reserve (44%)
Grey trembler			
Lesser Antillean flycatcher			
Saint Lucia black finch			
Saint Lucia oriole			
Saint Lucia pewee			

QUALITY



UNDER THREAT

Outputs 6. Priority forest areas

Montane rain forests

impressive record of success

Deciduous seasonal forest

Semi-evergreen seasonal forest

Offshore islands

•

very high biodiversity; under severe threat

remnants; in need of restoration

safe havens from introduced predators

Outputs 6. Priority forests – successes and challe

Montane rain forests

impressive record of success

 Deciduous seasonal forest very high biodiversity; under severe threat

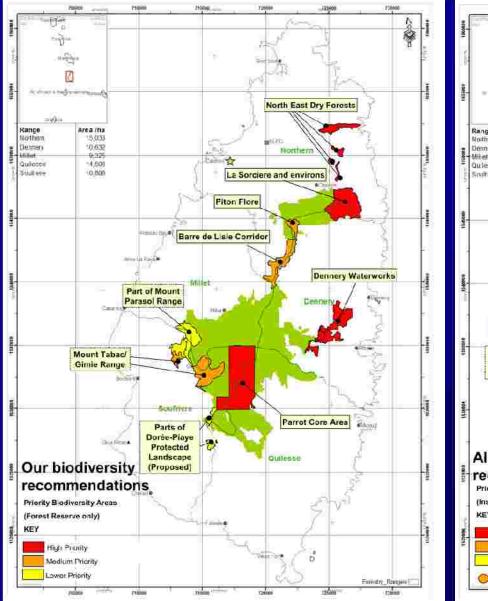
 Semi-evergreen seasonal forest

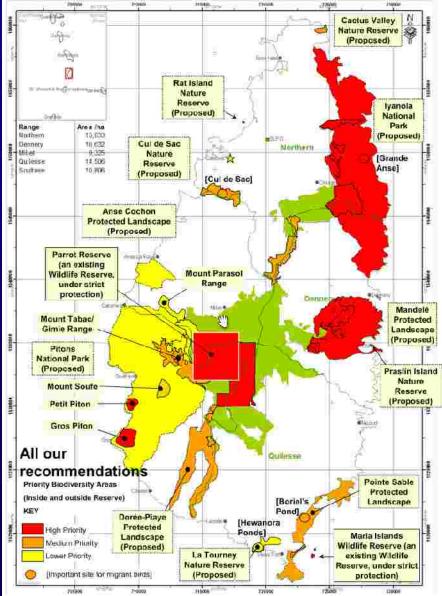
remnants; in need of restoration

Offshore islands

safe havens from introduced predators

Outputs 6. Priority forest areas



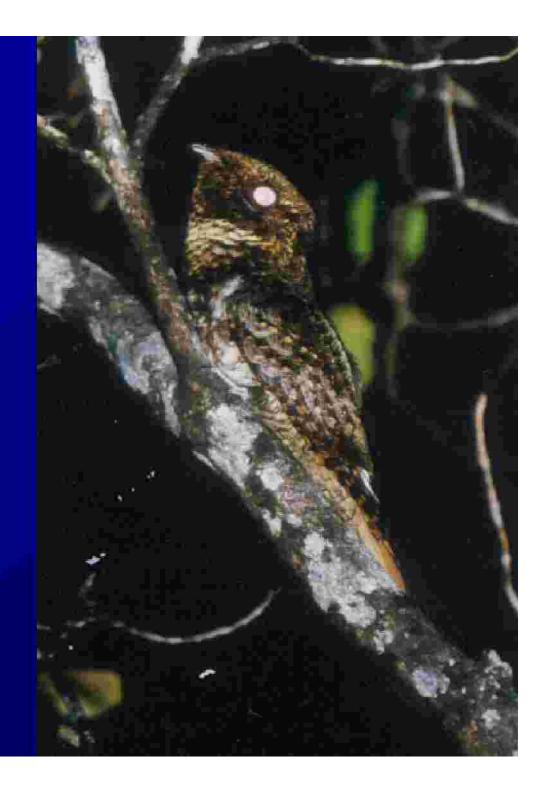


• Flagship species





 At very high risk of extinction



• Endemics – irreplaceable



- Key ecosystem roles
- e.g. pollination, seed dispersal, control of insect numbers



- Endemic irreplaceable
- At very high risk of extinction
- Key ecosystem roles
- Flagship species



C. Priority species THE MAIN THREATS

Outputs 7. Management Recommendations

Site many sement and restoration Seciduous seasonal and semi-evergreen sea nal forest are the big gaps in biodiversity management Offshore islands are fragile treasures Species management Manage small, fragmented populations Reduce the impact of introduced predators Community involvement Sustainable use of some species seems possible (lansan) Research is a part of management Manage ? Monitor ? Learn ? Manage better ? Monitor...

