The Customary Use of Vulturine Parrots (*Psittrichas fulgidus*) and its Implications for Conservation in the Highlands of Papua New Guinea

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OVERVIEW

- Introduction
  - *Papua New Guinea Bio-Culture,*
  - *Profile,*
  - *Process of obtaining feathers*
- Study Site
- Method
- Analysis
- Results and Discussion
- Conclusion (Conservation implications)
  - *Local actions*
  - *WCS actions*

Papua New Guinea

- Eastern half of the Island of New Guinea,
Largest(790,000 km^2) & highest tropical island (>4000 m)

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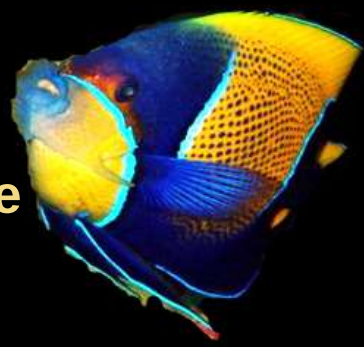
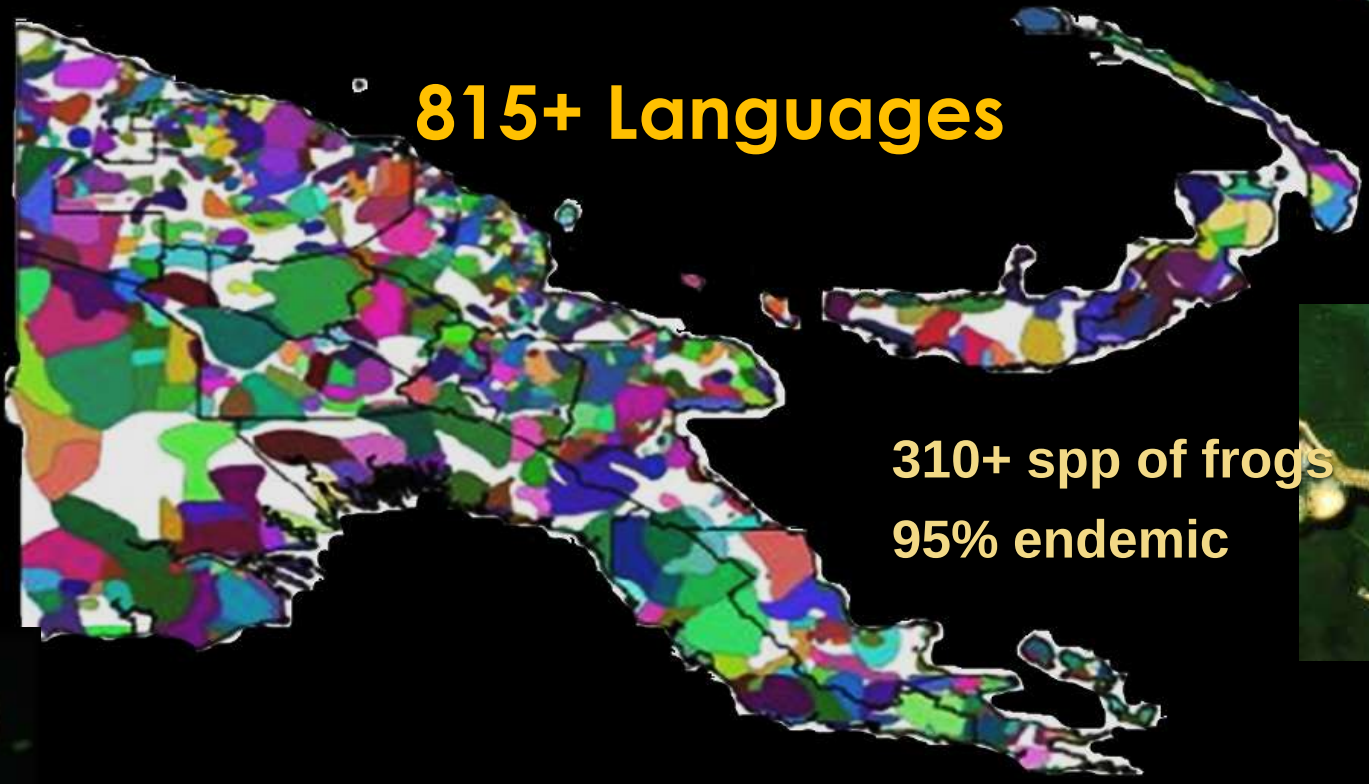
Bio-Cultural diversity in PNG

340+ spp mammals
80% endemic



30% of global species of marine fishes



815+ Languages

310+ spp of frogs
95% endemic

350+ species of reptiles
80% endemic

520 species of land birds
80% endemic

BIO-CULTURE

Stephanies Astrapia
(Astrapia stephaniae)

Stella's Lorikeet
(Charmosyna stellae stellae)

Lesser Bird of Paradise
(Paradisaea minor)

Vulturine Parrot
(Psittrichas fulgidus)

Common Spotted Cusucus
(Spilocuscus maculatus)

Goodfellow's Tree Kangaroo
(Dendrolagus goodfellowi)

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Psittrichas fulgidus

Common name	Vulturine or Pesquet's Parrot
IUCN Red List Criteria	VULNERABLE
Range	New Guinea, 200- 1800 m asl
Diet	Highly specialized frugivorous diet (Ficus)
Population	22 000 pairs (1998)
Clutch size	2 eggs/year
Threat	**Overhunting for feathers**

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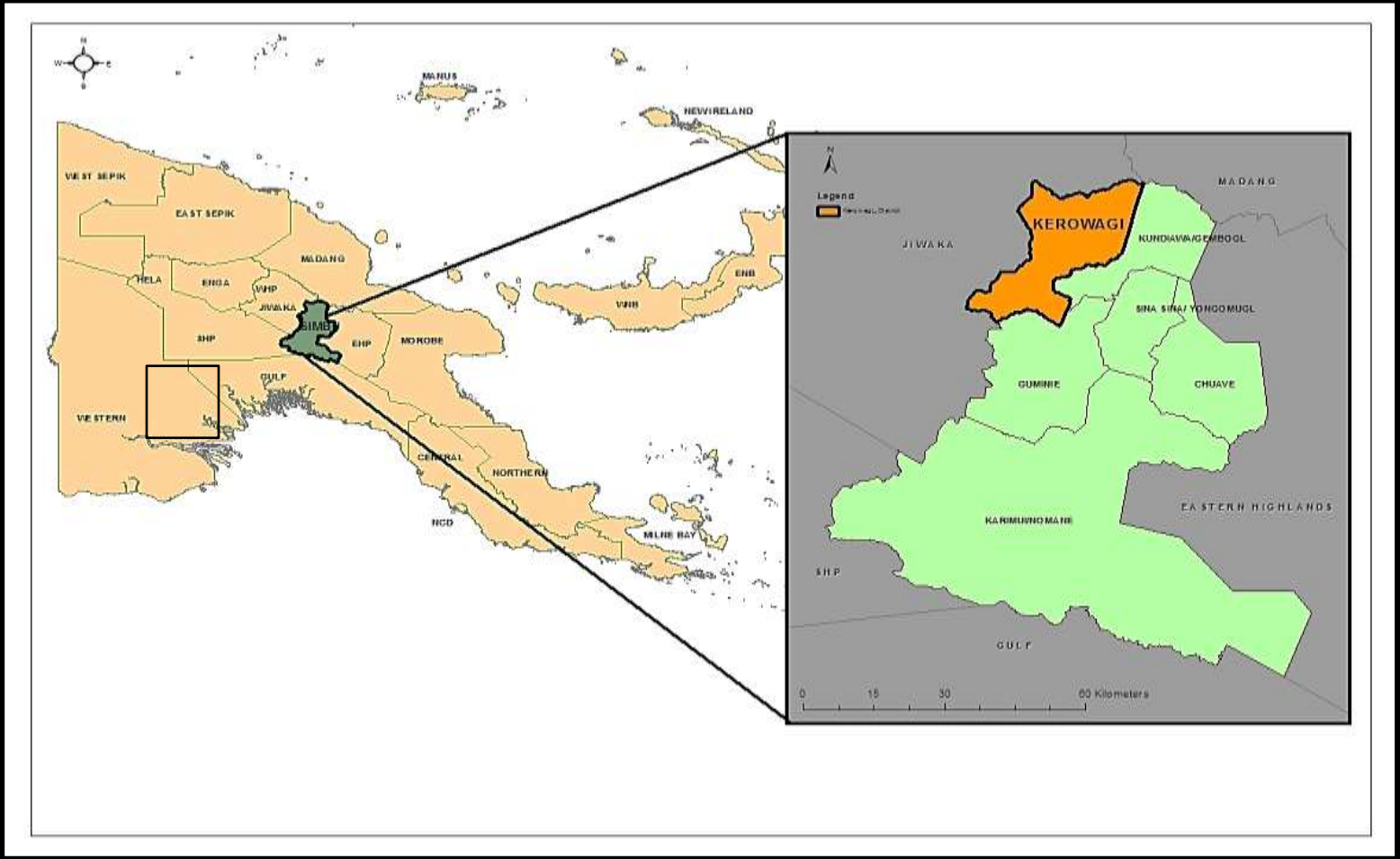
STUDY SITE



- Kerowagi district, Simbu Province (6°13'4.8"S 144°45'21.6"E) ,2422m asl
- Population= 93 107 (2011 Census)

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AIM

1. How many birds were hunted for/by the community and the life span of the *bilas*?

2. How the birds were used culturally?

3. Species distribution modelling

WHAT WE'RE UP AGAINST...

METHOD

- 67 ornament owners participated
-Questionnaires
-Guided story telling (hunters)

- *How many Vulturine Parrot feather ornaments owned?*
- *How old are they?*
- *How many parrots were used to create them Where was it purchased?*
- *How much did it cost?*
- *What occasion is the bilas used most for?*

ANALYSIS

- **R(3.0.0)**

Models

- 16 Linear models were created

Factors examined:

- *bilas age*
- *-Village of interviewee*
- *- Age and sex of interviewee*
- *- Hunter or Non-hunter*
- *- Income made from bilas*

Species Distribution Modelling

- BIOCLIM (bio-climatic envelope model) and MAXENT in Program R.

- Occurrence data gathered from the Global biodiversity information Facility (http://www.gbif.org/species)

Model selection based on AICc :

	K	AICc	Delta_AICc	AICcWt	Cum.Wt	LL
mod 12	8	585.94	0	1	1	-283.61
mod 13	5	596.89	10.94	0	1	-292.92
mod 5	10	601.9	15.96	0	1	-288.83
mod 3	3	605.08	19.14	0	1	-299.34
mod 7	4	607.22	21.28	0	1	-299.27
mod 16	29	607.79	21.85	0	1	-238.65
mod 14	3	627.45	41.51	0	1	-310.53
mod 10	2	629.37	43.43	0	1	-312.59
mod 11	7	630.44	44.5	0	1	-307.26
mod 9	3	630.58	44.63	0	1	-312.09
mod 15	4	631.59	45.65	0	1	-311.47
mod 8	10	635.83	49.89	0	1	-305.92
mod 1	36	686.26	100.32	0	1	-255.9
mod 4	35	694.14	108.2	0	1	-270.07
mod 6	37	698.25	112.31	0	1	-255.88
mod 2	51	1071.97	486.03	0	1	-243.89

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RESULTS AND DISCUSSION

- **Model 12** best described how many Vulturine Parrots were hunted with two factors ;

1. Age of the feathers

2. Replacement frequency

RESULTS AND DISCUSSION…

- Vulturine Parrots Used by hunters and non-hunters

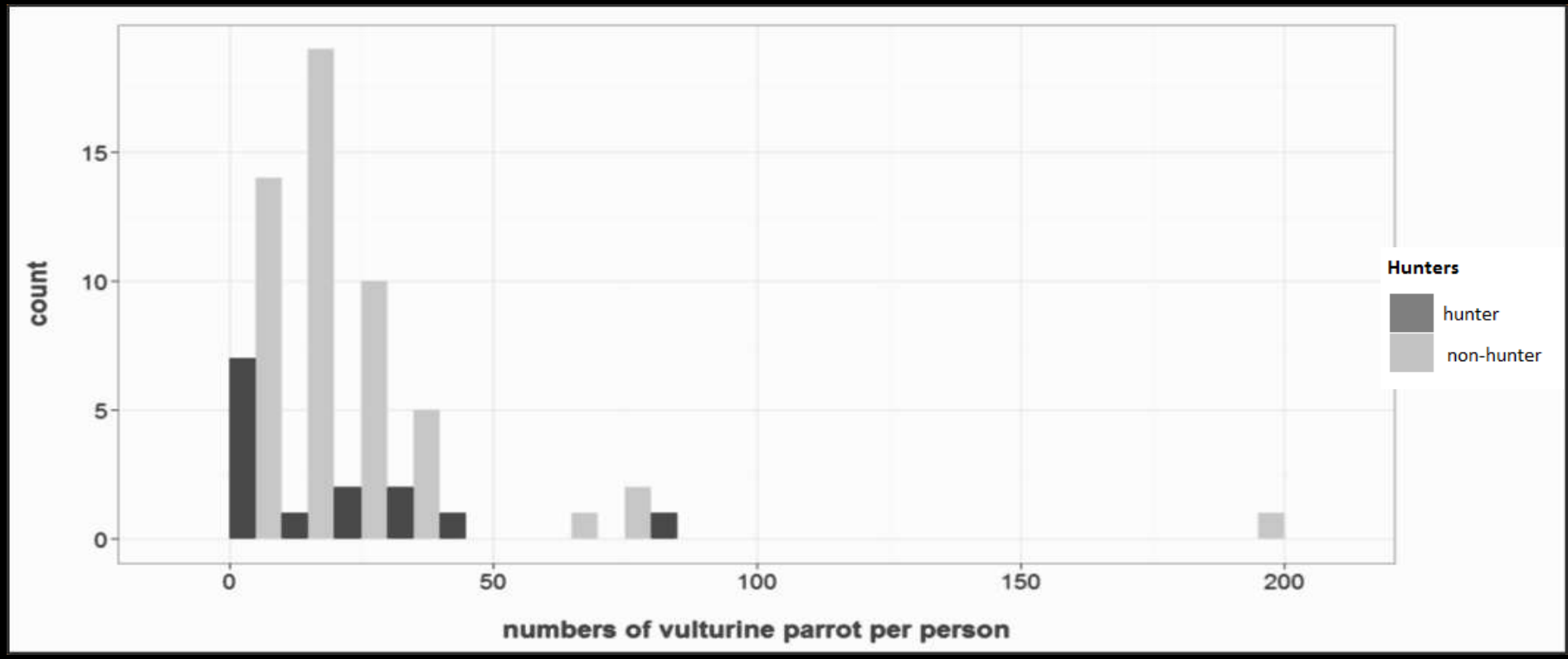

Figure 1: Histogram of the number of Vulturine Parrot represented in hunter and non-hunter collections of bilas

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RESULTS AND DISCUSSION…

- Uses of ornaments

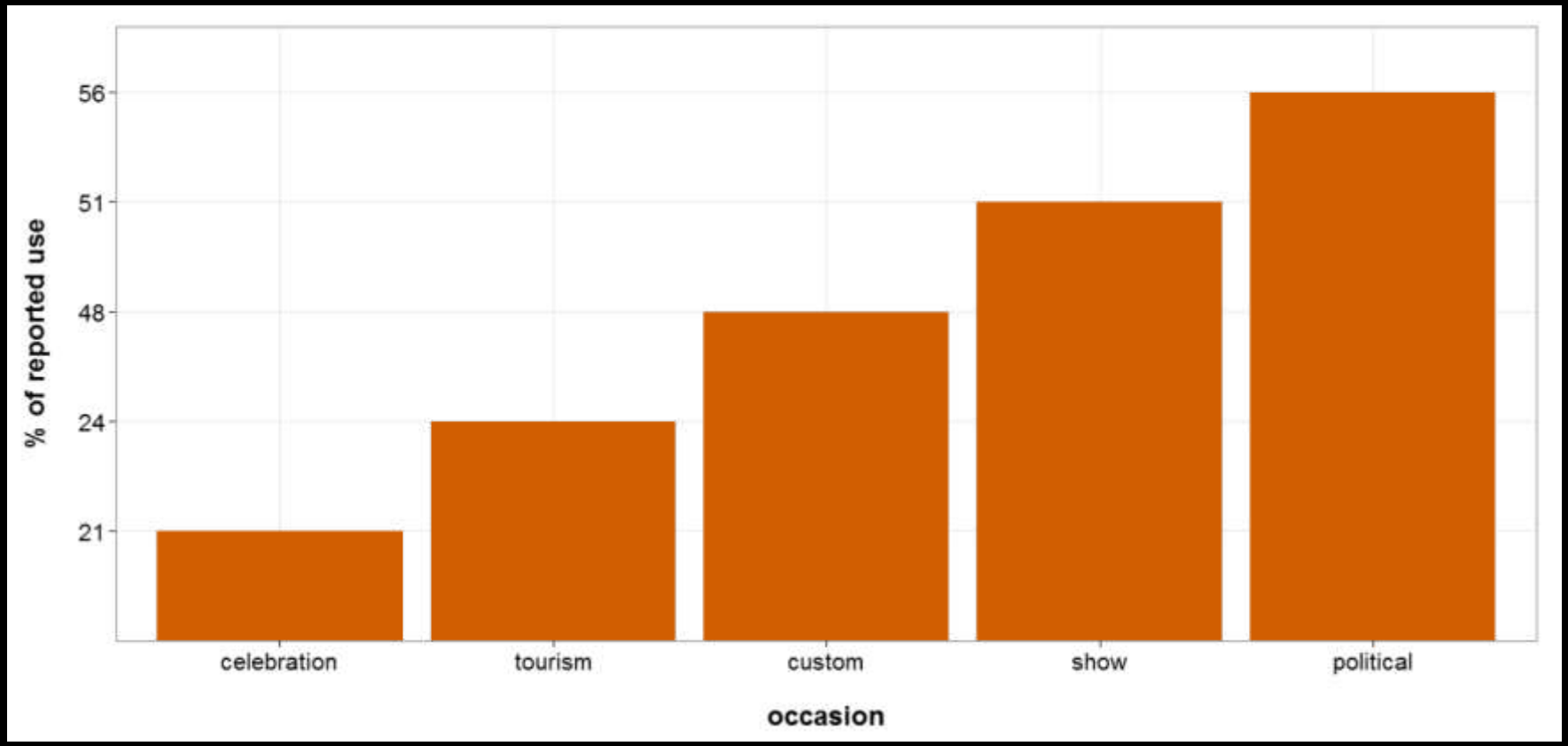

Figure 3: respondents use of bilas

A dramatic change in the purpose of *bilas* over the past century from fulfilling customary obligations into more monetary based activities.

RESULTS AND DISCUSSION…

- Age-class of respondents and Bilas owed

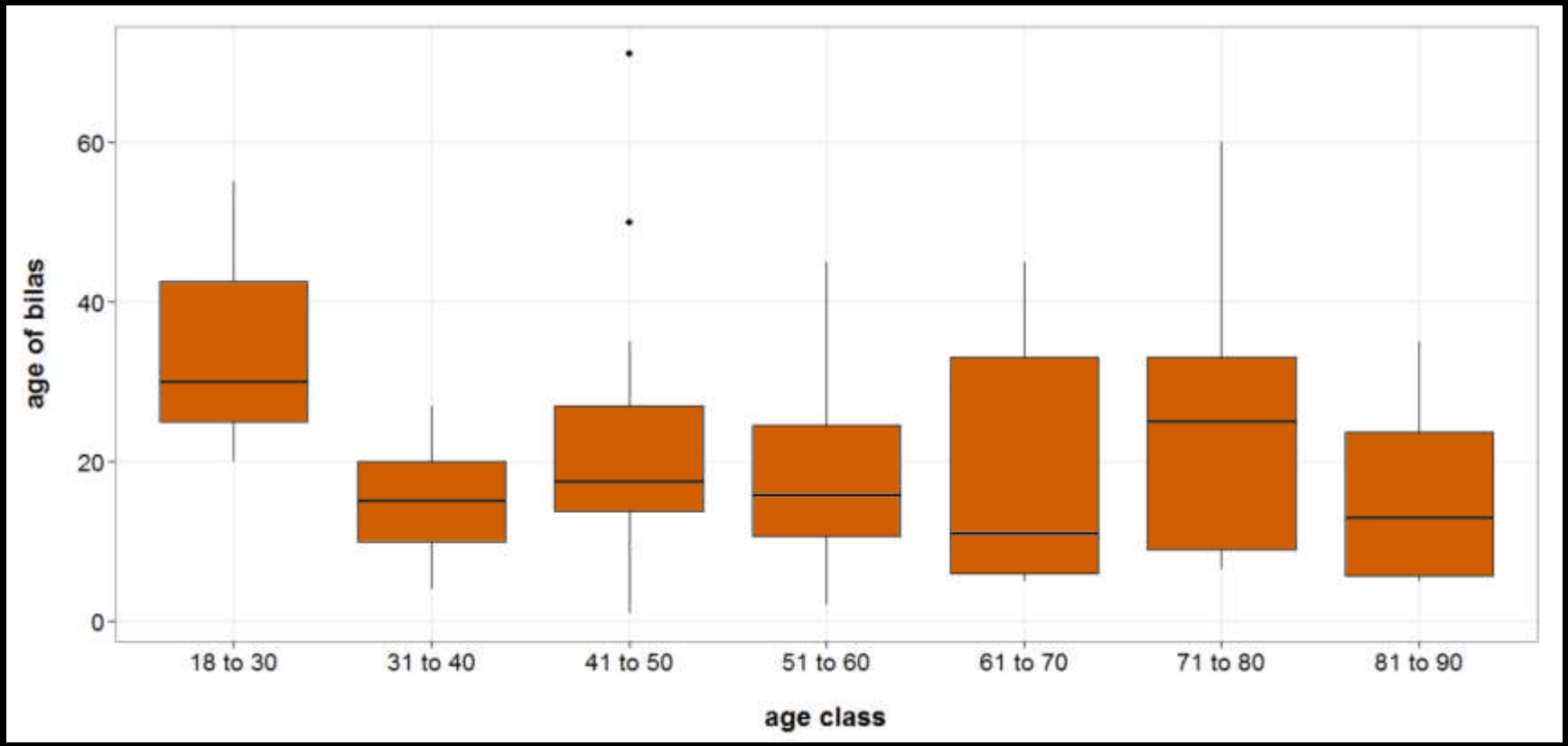

Figure 4 :Box and whiskers plot showing the variation of age of *bilas* with age class of respondent. Average replacement after 20 years.

Age class 18-30 and 71-80 show ornaments of similar age. This shows inheritance by the younger age and they are not hunting new birds

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RESULTS AND DISCUSSION…

- Species distribution modelling

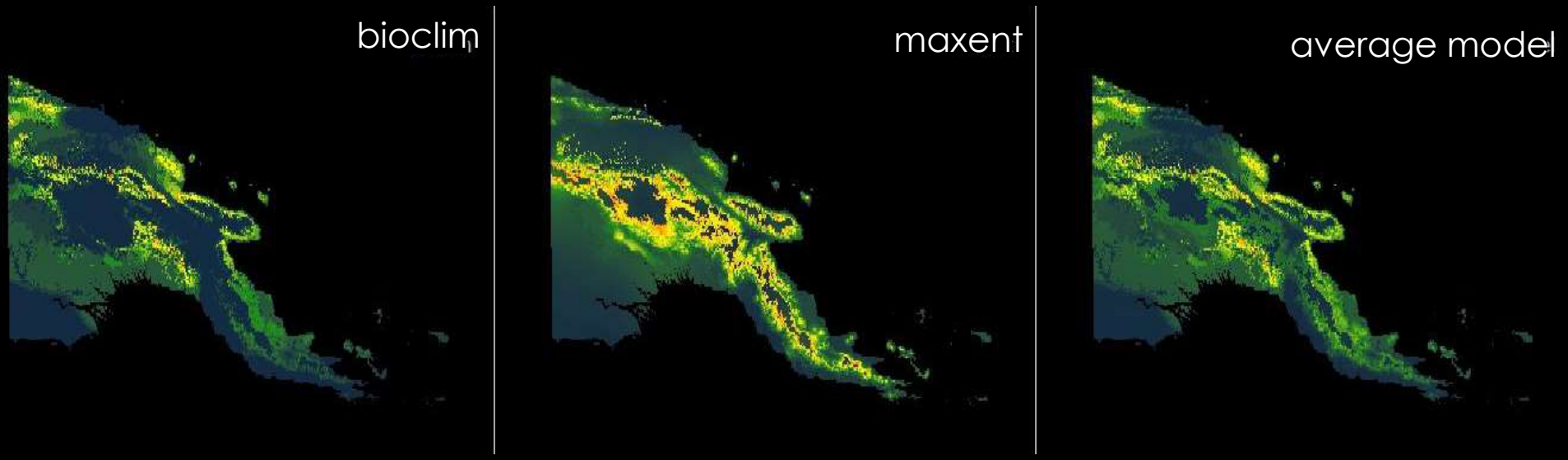

Figure 4: Species distribution modelling using two techniques: BIOCLIM and MAXENT. An averaged map of the two methods is also produced.

Key:

Colours = likelihood of occurrence: **Orange**= high, **Yellow**=medium, **Green** = low, **Grey** = predicted absence.

WCS ACTIONS

1 Ornament Preservation

2 Species distribution modelling

3 Inform policy makers and Key stakeholders

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LOCAL ACTIONS

Oliver Strew

Hunters

Nursing birds should not be targeted

Preserve active nest sites (dead hollow trees)

Use traditional hunting methods

Users

Maintain/use proper storage methods

Substitution of feathers (artificial or other abundant species e.g. Lories or Lorikeet)

Highly specialized frugivorous diet (Ficus)

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ACKNOWLEDGEMENT

- Kerowagi Community, Translators Philip KC Wau, Charlene Par, Simbu Province
- Nathan Whitmore- Wildlife Conservation Society PNG
- WCS PNG Staff Goroka, EHP
- Dr Augustine Mungkaje (PhD) - University of PNG
- Christensen Funding
- Student Conference of Conservation Science

WAKAI WEH…

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THE CHRISTENSEN FUND

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