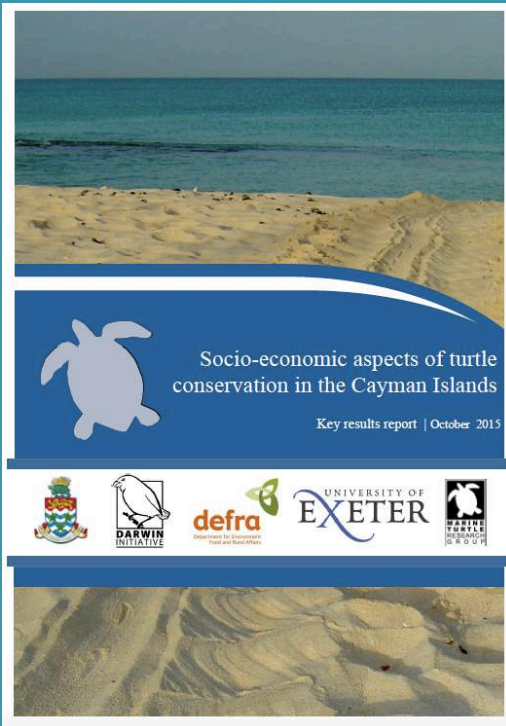


# Socio-economic aspects of turtle conservation in the Cayman Islands: key findings

Dr Ana Nuno, Prof Brendan Godley,  
Dr Annette Broderick

# ACKNOWLEDGEMENTS



- Cayman Turtle Farm provided sales data
- Cayman Islands Economics and Statistics Office assisted in household selection
- 12 people collected data
- 1003 people were interviewed
- many other people helped with maps, question and survey design, etc.

# WHY THIS STUDY?



- Provide turtle meat for consumption
- Reduce demand on wild population
- Replenish the wild nesting population through the release of turtles

- Illegal take of wild turtles
- Uncertainty about the importance and current prevalence of turtle consumption
- International campaign to end turtle farming by WAP



# WHY THIS STUDY?

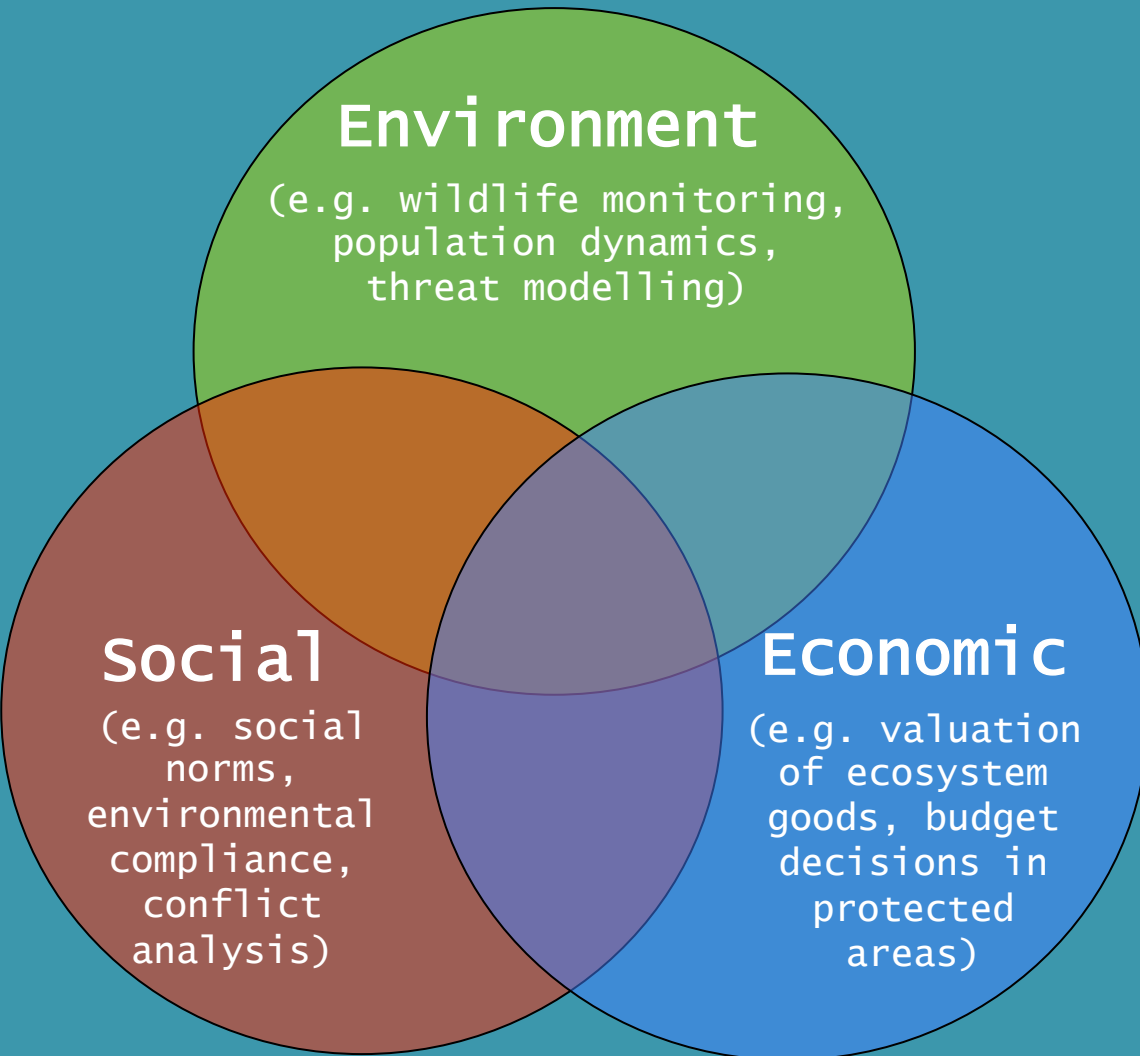


Project aim: provide robust scientific data on the role of the Cayman Turtle Farm in wild turtle conservation.

Information from this study will be used to produce management recommendations by DoE and National Conservation Council.

Species conservation plan will take these results into account and recommendations will go through public consultation at later stage.

# MY BACKGROUND



## EDUCATION:

- ✓ BSc Biology, University of Porto, Portugal
- ✓ MRes Biodiversity & Conservation, University of Leeds, UK
- ✓ PhD Conservation Science, Imperial College London, UK

## CASE STUDIES:

- ✓ Illegal hunting in the Serengeti, Tanzania
- ✓ Illegal bird hunting in Portugal

# STUDY APPROACH I

## STEP 1:

In June-July 2014:

- interviews with 26 representatives of:

- ✓ Department of Environment
- ✓ Cayman Turtle Farm
- ✓ World Animal Protection
- ✓ Seafarers Association
- ✓ Marine Conservation Board
- ✓ Department of Tourism
- ✓ hospitality and diving industries

We identified questions of conservation and policy relevance according to multiple stakeholders

# TYPE OF QUESTIONS

- Demand by residents  
*What is the prevalence of turtle consumption?*
- Restaurants and tourists  
*How many turtle meals are served by restaurants?*
- Turtle meat sales  
*Have sales of turtle meat changed over time?*
- Illegal turtle meat  
*Do consumers prefer wild or farmed turtle?*
- Management preferences  
*Any management recommendations by the public?*

# STUDY APPROACH II

## STEP 2:

In September 2014 – June 2015:

- social surveys:

resident households (n= 597)

airport tourists (n= 87)

cruise ship tourists (n= 117)

high school students (n= 174)

restaurants (n= 39)



### Airport survey: V1

**This survey is for international tourists only.**

Hello, my name is [interviewer's name] and I am collecting information for a study being conducted by the University of Exeter on behalf of the Department of Environment (DoE).

We are conducting a survey about turtles in the Cayman Islands. We would like to ask you some questions. If you decide to answer these questions, this information will be held totally anonymously, so that it is impossible to trace this information back to you. This information will be used to inform decisions about how to use and conserve sea turtles in the Cayman Islands.

Participation in this study is entirely voluntary and you can withdraw from the study at any time without giving a reason. Any information provided will be shared with the research team and may be used in subsequent publications. A summary of the information will also be made public locally. This questionnaire will take approximately 10 minutes.

This study is funded by a Darwin Initiative grant given to the University of Exeter and the Department of Environment.

Would you like to participate in this study?



# DEMAND BY RESIDENTS

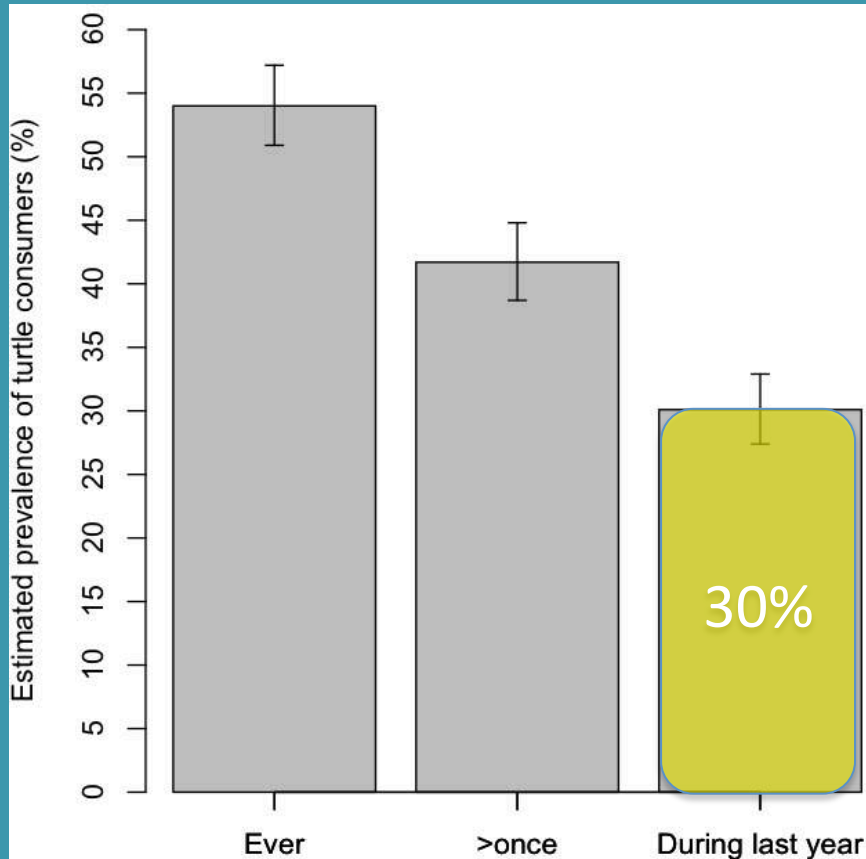
*How was the sample of resident households selected?*

- Sampling frame: Cayman Islands household register, compiled by the Cayman Islands Economics and Statistics Office
- Sample size: 100 households in each of the six districts were randomly selected
- To account for differences in district population size, each interview was given a weight that can be thought of as the number of people that interview represents.



# DEMAND BY RESIDENTS

*what is the prevalence of turtle consumption by residents?*

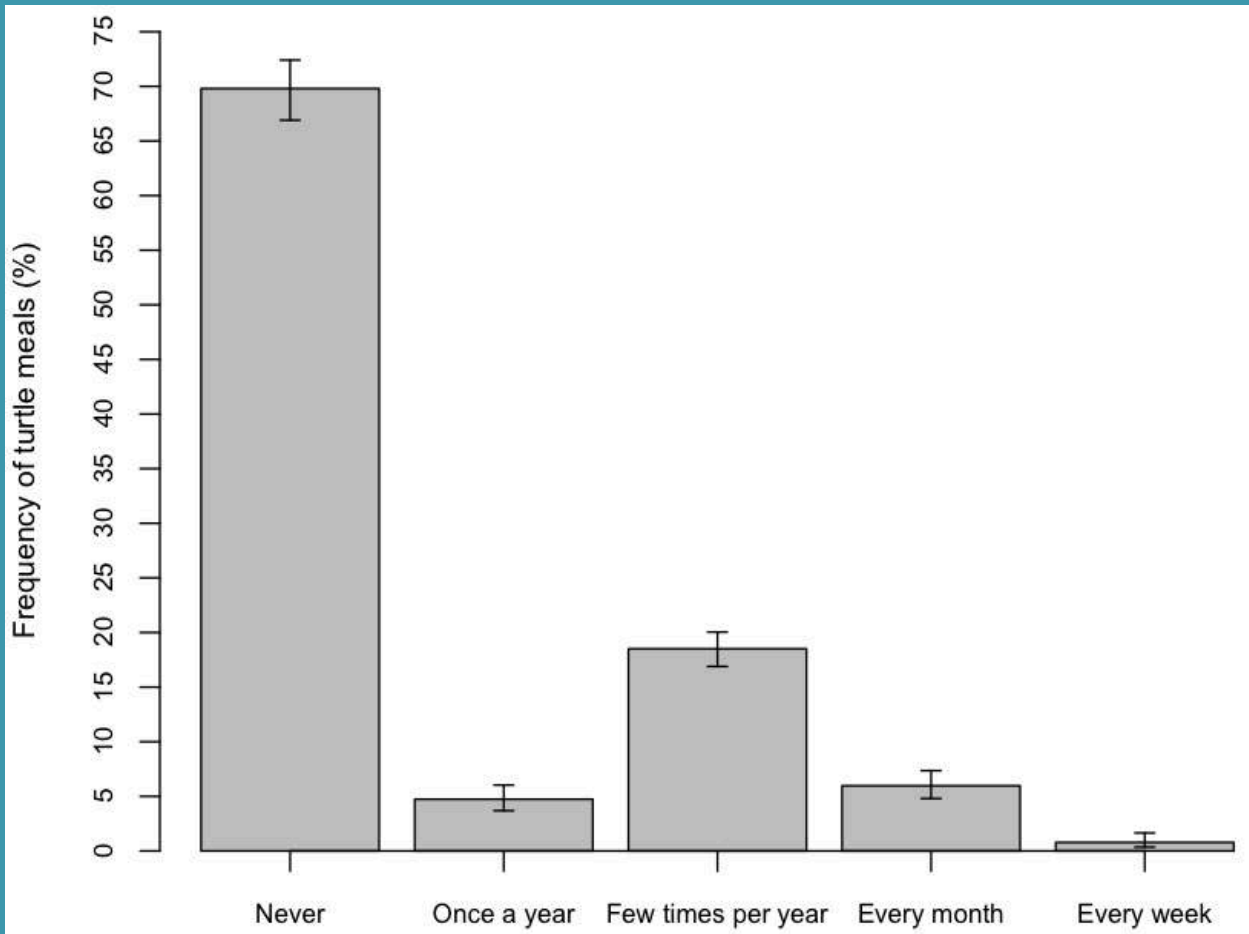


30% of the resident households consumed turtle at least once during the last 12 months prior to our study

**CONSUMERS**

# DEMAND BY RESIDENTS

*How often do residents consume turtle meat?*



Among turtle consumers, most eat it a few times per year

# DEMAND BY RESIDENTS

*what is the socio-demographic profile of turtle consumers among residents?*

Data collected on respondents:

- ✓ gender
- ✓ education level
- ✓ household size
- ✓ age group
- ✓ nationality
- ✓ registered for voting
- ✓ any grandparent born in the Cayman Islands
- ✓ district of residence

Best predictors:

- gender
- voting registration
- being Caymanian by descent (i.e. at least one grandparent born in Cayman Islands)

# DEMAND BY RESIDENTS

*Is nationality a good predictor of turtle consumption among residents?*

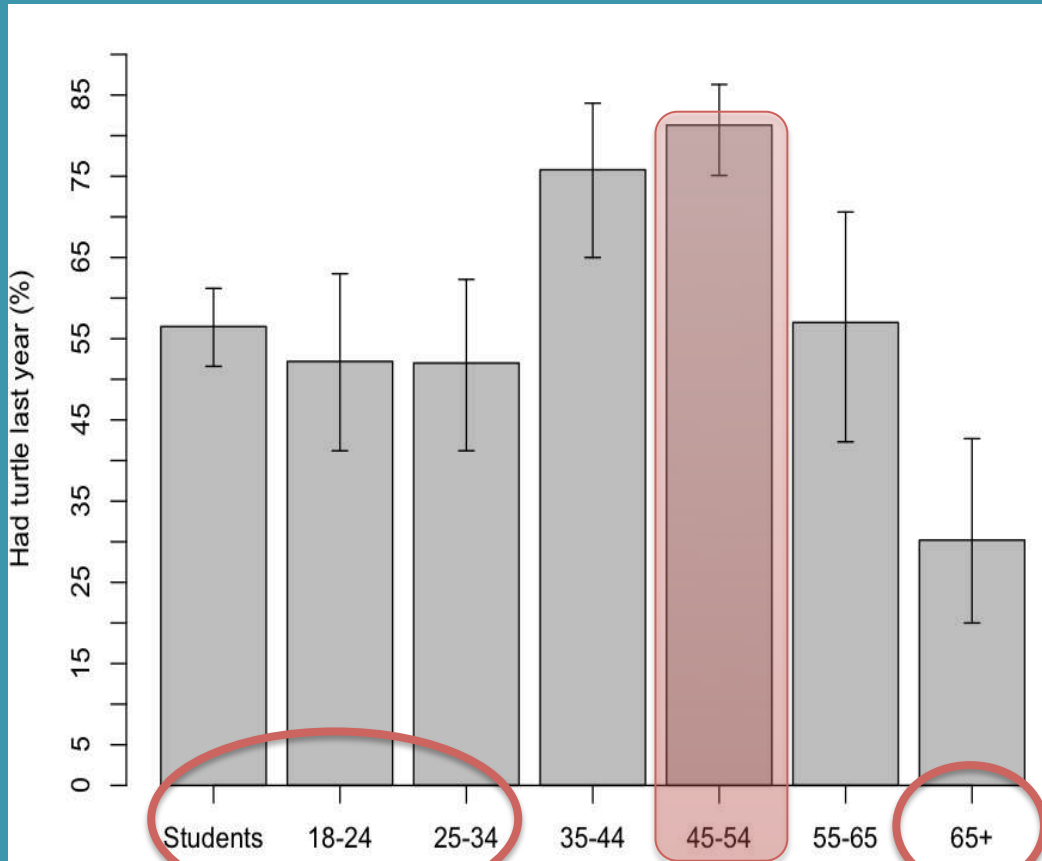
Consumption among different nationalities:

- 56% among Caymanian
- 27% among Caymanians who have dual nationality
- 12% among Jamaican
- 3% among British and American
- 9% among other nationalities.

But being Caymanian by descent was better predictor of turtle consumption than nationality  
(62% prevalence for those with a Caymanian grandparent and 13% for those without)

# DEMAND BY RESIDENTS

*Are there age differences in turtle consumption among residents?*



within Caymanians by descent, consumption prevalence was highest amongst those aged 45-54 years old

# DEMAND BY RESIDENTS

*To what extent do residents feel they can get turtle meat if they want to?*

Among turtle consumers:

- 55% would maintain the same consumption level
- 44% would like to have turtle more often
- 1% would decrease their consumption.

For those that would like to eat turtle more often, main restrictions were related: price (96%) and availability (42%).

But animal welfare and husbandry to be considered!

# DEMAND BY RESIDENTS

*In the near future, is the prevalence of turtle consumption by residents likely to change?*

- Most consumers reported being interested in maintaining or increasing the frequency of turtle meals -> behaviour is not expected to “die out” in the near future
- Age differences in consumption prevalence among residents who are Caymanian by descent -> generational effects may be important at the longer term



# RESTAURANTS & TOURISTS

*How many turtle meals are served by restaurants?*

- we identified 41 restaurants/ food businesses serving turtle dishes in the Cayman Islands

More robust data needed but we estimate 30 300 - 95 900 turtle meals have been consumed in restaurants last year.



# RESTAURANTS & TOURISTS

*What is the prevalence of turtle consumption among tourists?*

Tourists eating turtle during their visit to the Cayman Islands in Nov 2014:

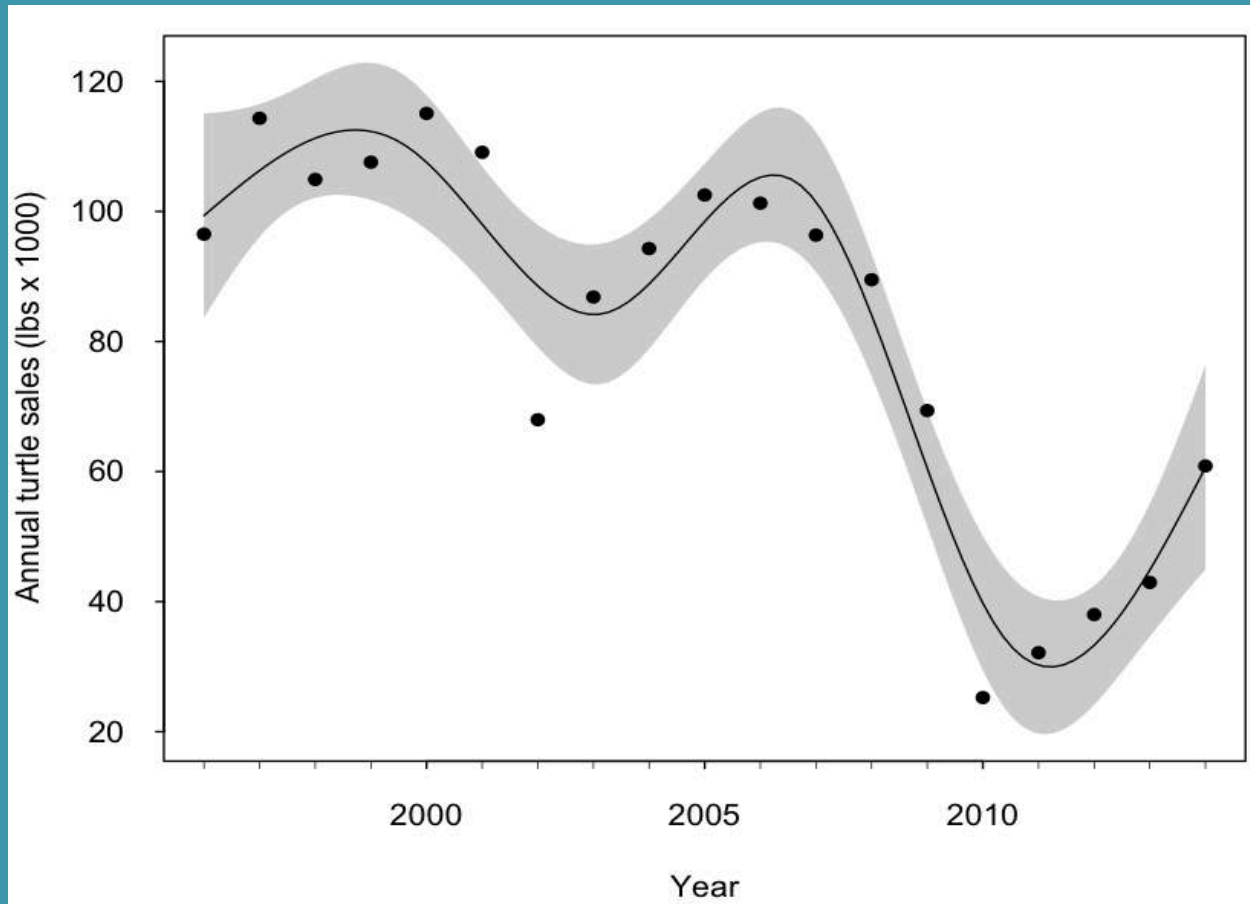
- 2% of the stay-over tourists
- 6% of the cruise ship tourists.

156,912 tourists entered CI in Nov 2014.  
Extrapolating to all tourists in November 2014:

8316 tourists ate turtle

# TURTLE MEAT SALES

*Have sales of turtle meat by CTF changed over time?*



# ILLEGAL TURTLE MEAT

Purchasing turtle meat taken from the wild without a license is illegal so:

- we used a number of specialized questioning techniques developed to obtain more reliable estimates
- we triangulated information by asking different questions to obtain similar information
- respondents were guaranteed anonymity
- interviews were conducted by neutral people not employed by DoE, CTF or WAP.

# ILLEGAL TURTLE MEAT

*What is the prevalence of consumption of illegal turtle meat?*



Photo: DoE

2% of all resident households bought illegal turtle meat during the last year, representing at least 195 households

# ILLEGAL TURTLE MEAT

*What are the preferences of consumers regarding wild and farmed turtle?*

Based on direct questions:

- 16% of consumers reported preferring wild turtle.
- Taste was the main reason for consumers preferring wild turtle.
- wild turtle being illegal and availability were the main reasons for consumers preferring farmed turtle.

# ILLEGAL TURTLE MEAT

*What are the preferences of consumers regarding wild and farmed turtle?*

	A	B	C
<b>Distance travelled (miles; one way)</b>	5	30	30
<b>Source of meat</b>	Wild	Farmed	Farmed
<b>Frequency</b>	A few times per month	A few times per month	A few times per year
<b>Number of nesting turtles in the wild</b>	20	300	600
<b>Price per pound (CIS)</b>	5	10	5
<b>Preferred option</b> [tick A, B or C]			

# ILLEGAL TURTLE MEAT

*What are the preferences of consumers regarding wild and farmed turtle?*

Overall consumer population prefers:

- 1<sup>st</sup>: cheapest prices
- 2<sup>nd</sup>: farmed turtle instead of wild turtle
- 3<sup>rd</sup>: intermediate frequency of turtle meals (consumers prefer having turtle a few times per month instead of a few times per year or every week)
- 4<sup>th</sup>: travelling small distances
- 5<sup>th</sup>: high numbers of nesting turtle population

wild meat is selected if the distance to obtain farmed meat is too great.



# ILLEGAL TURTLE MEAT

*Would consumers buy wild turtle if CTF closed down?*

47% of consumers self-reported being more likely to be interested in purchasing wild turtle in case of a closure of CTF.

People were more likely to think this way if they were:

- registered for voting
- Caymanian
- older than 54 and younger than 25.

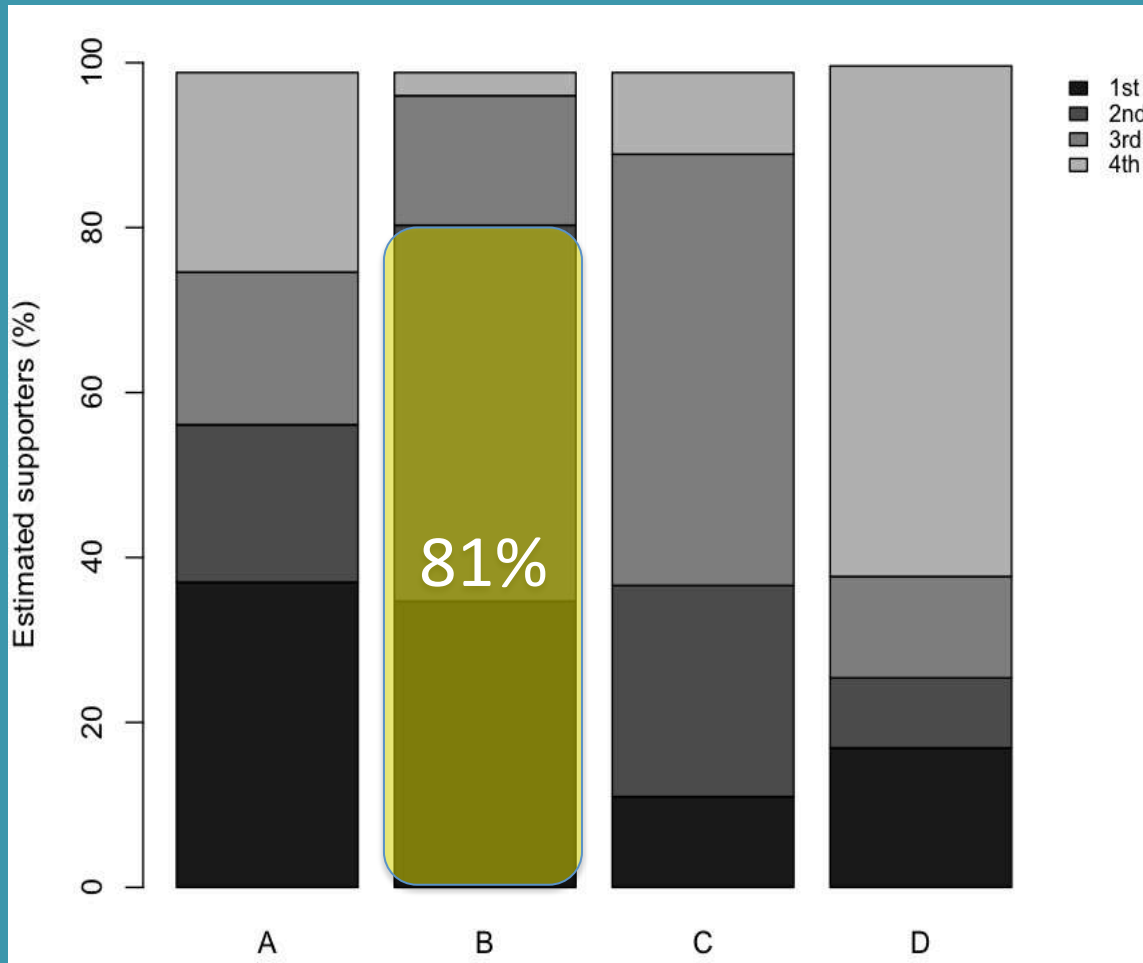
This is suggestive of potential behaviour or, at least, as a sign of disagreement.

# MANAGEMENT PREFERENCES

- A) Cayman Turtle Farm sells turtle meat to any individual and to any restaurant (as at present).
- B) Cayman Turtle Farm sells turtle meat to any individual. A new licensing system is put into place for restaurants to help ensure that all turtle meat served to customers comes from the Turtle Farm, not the wild.
- C) Cayman Turtle Farm sells turtle meat to any individual. A new licensing system is put into place for restaurants to help ensure that all turtle meat served to customers comes from the Turtle Farm, not the wild. In order to decrease the possibility that tourists eat turtle meat, licensed restaurants can serve turtle but they do not advertise it or put it on their menus.
- D) Cayman Turtle Farm changes its focus and makes a gradual transition away from turtle farming and selling turtle meat to become a 'turtle hospital' instead.

# MANAGEMENT PREFERENCES

*What management alternatives do residents prefer?*

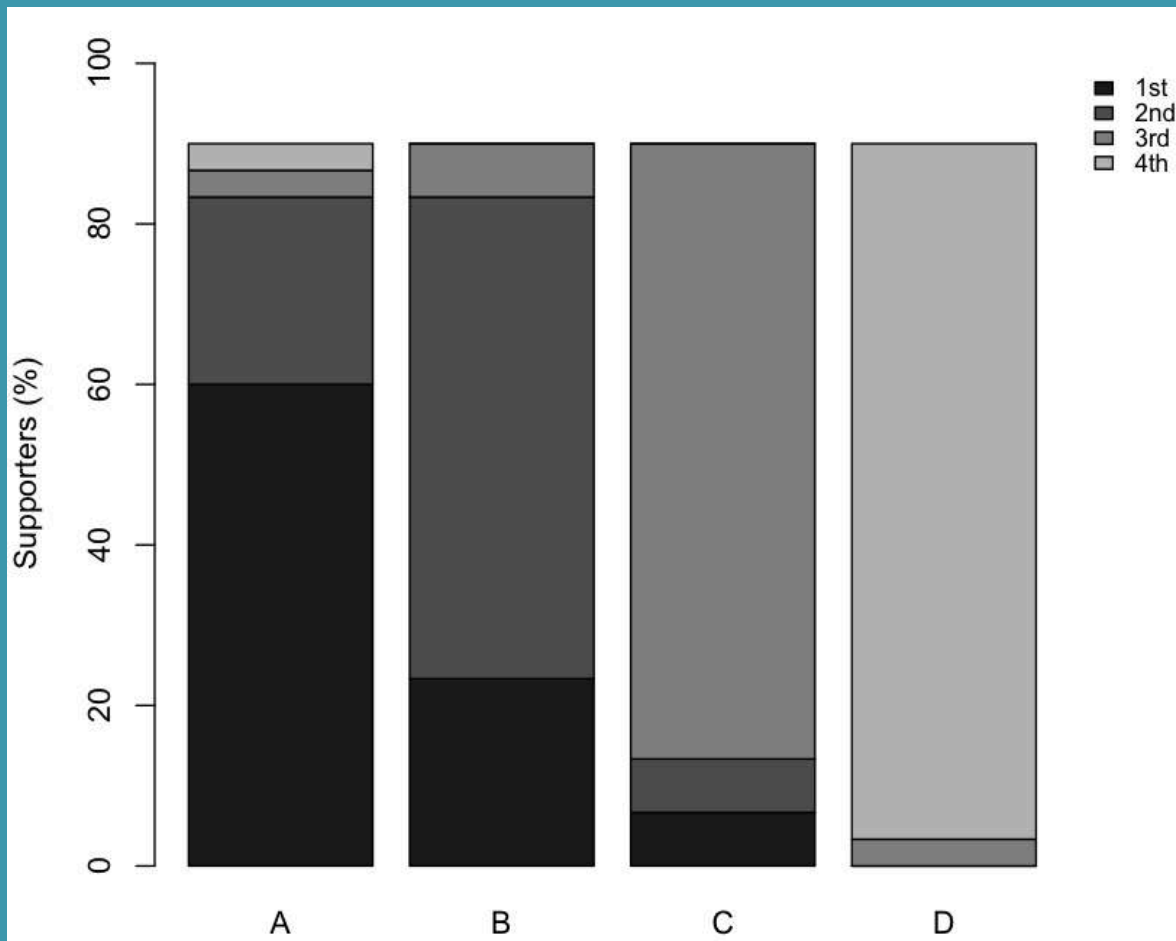


A: nothing changes  
B: licensed restaurants only  
C: licensed restaurants only AND only local consumers  
D: stop farming

More public support: option B (new licensing system)

# MANAGEMENT PREFERENCES

*What management alternatives do restaurants prefer?*



A: nothing changes  
B: licensed restaurants only  
C: licensed restaurants only AND only local consumers  
D: stop farming

Option A (nothing changes) was preferred option

# MANAGEMENT PREFERENCES

*What management recommendations for CTF do respondents have?*

Most frequently mentioned recommendations by residents:

- decrease turtle meat price
- improve animal health and welfare
- improve education/ awareness role and marketing strategy.

Most frequently mentioned recommendations by restaurants:

- decrease turtle meat price
- improve access and availability of turtle meat.

# NEXT STEPS & QUESTIONS



Photo: G. Redfern

This information will be used to produce conservation recommendations by DoE and National Conservation Council.

Species conservation plan will take these results into account and recommendations will go through public consultation at later stage.

Questions, comments and feedback about these results greatly appreciated!