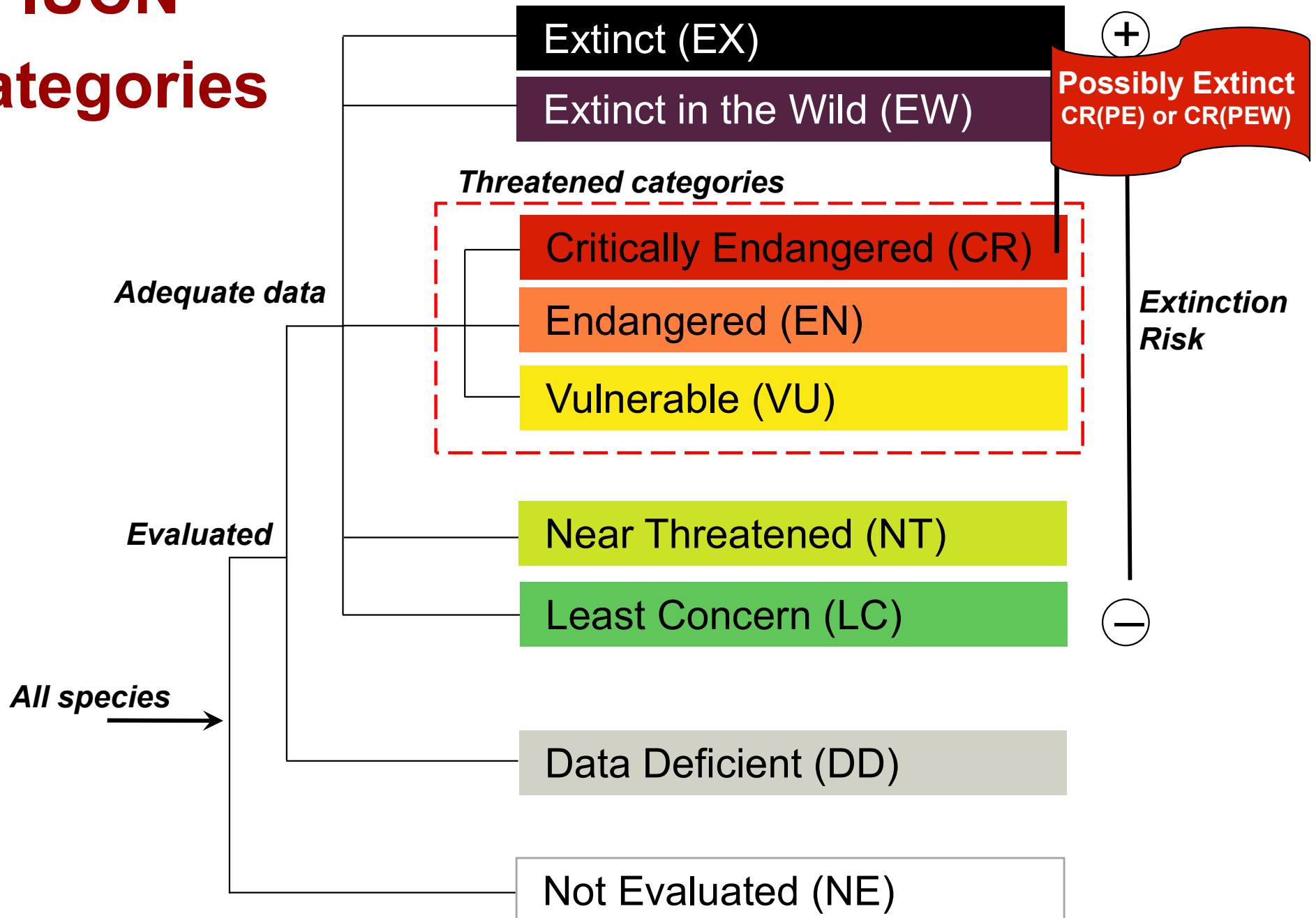




# IUCN Red List Categories

# The IUCN Categories

## Red List Categories

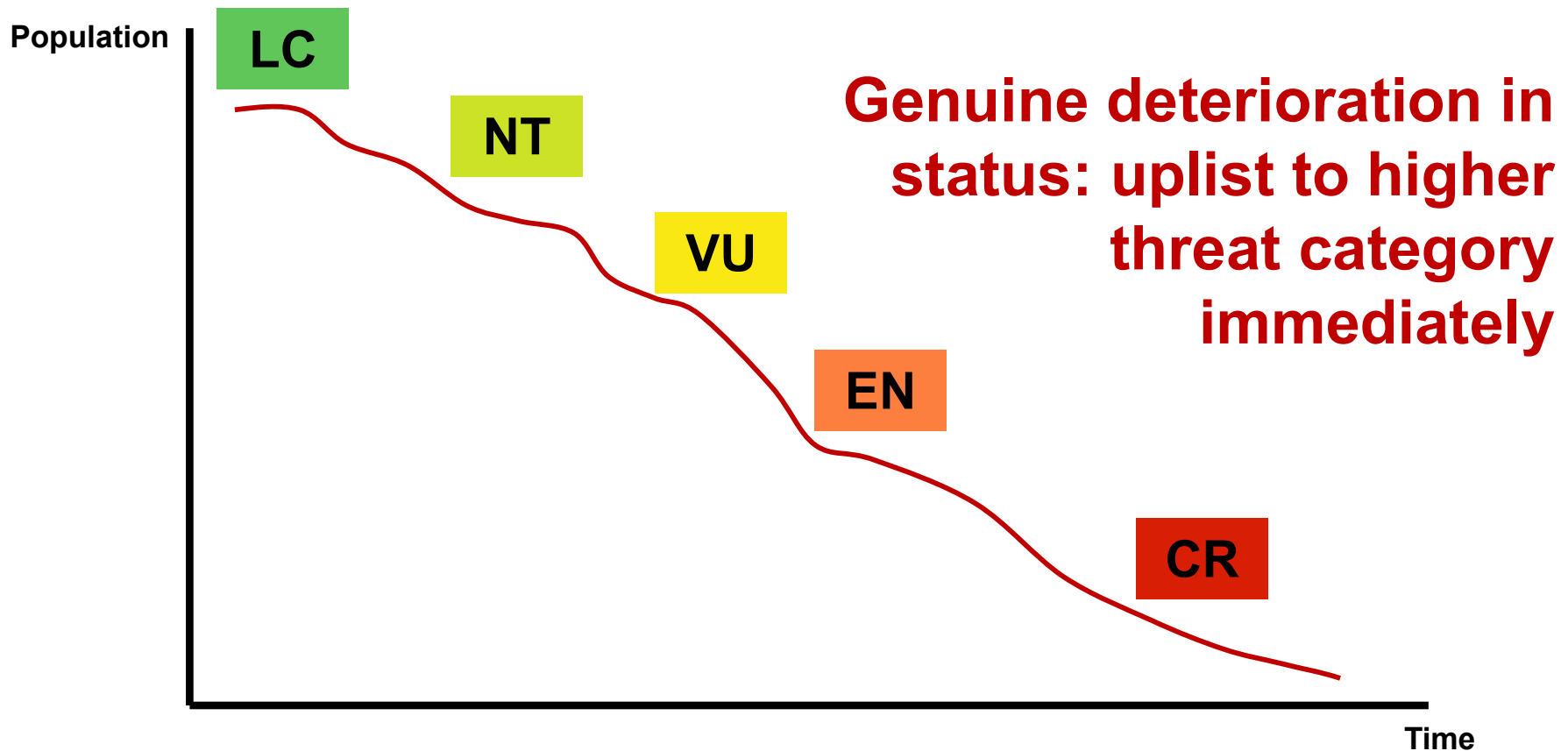


# Changing Red List Category

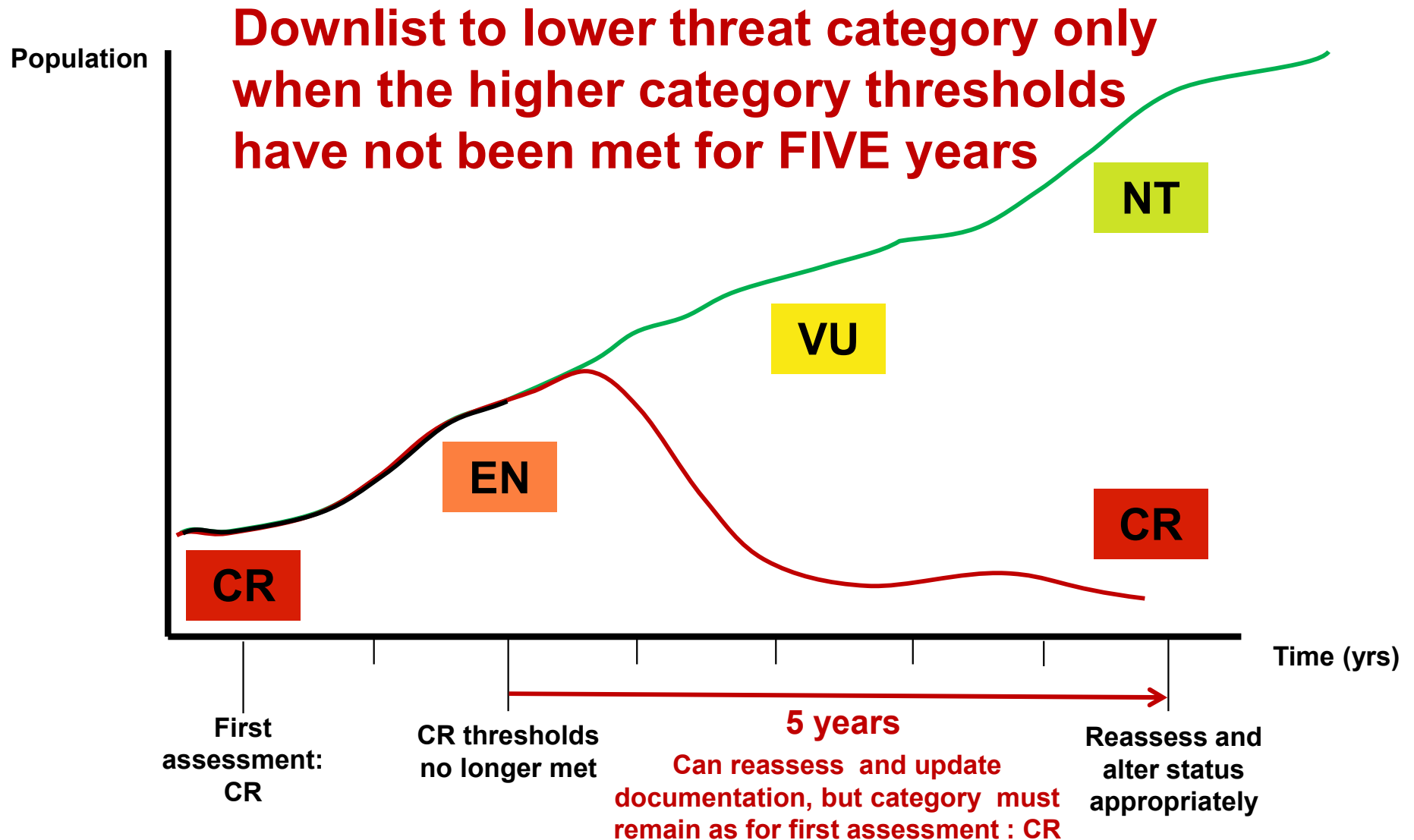
There are various reasons for a species to change category:

- **NON-GENUINE change**
  - New information
  - Taxonomic changes
  - Incorrect data used previously
  - Criteria revision (version 2.3 (1994) versus version 3.1 (2001))
  - Knowledge of the criteria
- **GENUINE status change**

## The Five Year Rule



# Genuine Improvements: The Five Year Rule





# Data Quality & Uncertainty

# Dealing with a lack of high quality data

- The threatened categories use quantitative thresholds
- **BUT** a lack of high quality data should not deter assessors from applying the IUCN criteria.

**A. Population size reduction.** Population reduction (measured over the longer of 10 years or 3 generations) based on any of A1 to A4

	Critically Endangered	Endangered	Vulnerable
A1	≥ 90%	≥ 70%	≥ 50%
A2, A3 & A4	≥ 80%	≥ 50%	≥ 30%
<p> <b>A1</b> Population reduction <u>observed, estimated, inferred, or suspected</u> in the past where the causes of the reduction are clearly reversible AND understood AND have ceased.                               <b>A2</b> Population reduction <u>observed, estimated, inferred, or suspected</u> in the past where the causes of reduction may not have ceased OR may not be understood OR may not be reversible.                               <b>A3</b> Population reduction <u>projected, inferred or suspected</u> to be met in the future (up to a maximum of 100 years). <i>[(a) cannot be used for A3]</i>   <b>A4</b> An <u>observed, estimated, inferred, projected or suspected</u> population reduction where the time period must include both the past and the future (up to a max. of 100 years in future), and where the causes of reduction may not have ceased OR may not be understood OR may not be reversible.                         </p> <p style="text-align: center;">based on any of the following:</p> <ul style="list-style-type: none"> <li>(a) direct observation [Except A3]</li> <li>(b) an index of abundance appropriate to the taxon</li> <li>(c) a decline in area of occupancy (AOO), extent of occurrence (EOO) and/or habitat quality</li> <li>(d) actual or potential levels of exploitation</li> <li>(e) effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.</li> </ul>			

**B. Geographic range in the form of either B1 (extent of occurrence) AND/OR B2 (area of occupancy)**

	Critically Endangered	Endangered	Vulnerable
B1. Extent of occurrence (EOO)	< 100 km <sup>2</sup>	< 5,000 km <sup>2</sup>	< 20,000 km <sup>2</sup>
B2. Area of occupancy (AOO)	< 10 km <sup>2</sup>	< 500 km <sup>2</sup>	< 2,000 km <sup>2</sup>

AND at least 2 of the following 3 conditions:

(a) Severely fragmented OR Number of locations	= 1	≤ 5	≤ 10
(b) Continuing decline <u>observed, estimated, inferred or projected</u> in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) area, extent and/or quality of habitat; (iv) number of locations or subpopulations; (v) number of mature individuals.			
(c) Extreme fluctuations in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) number of locations or subpopulations; (iv) number of mature individuals.			

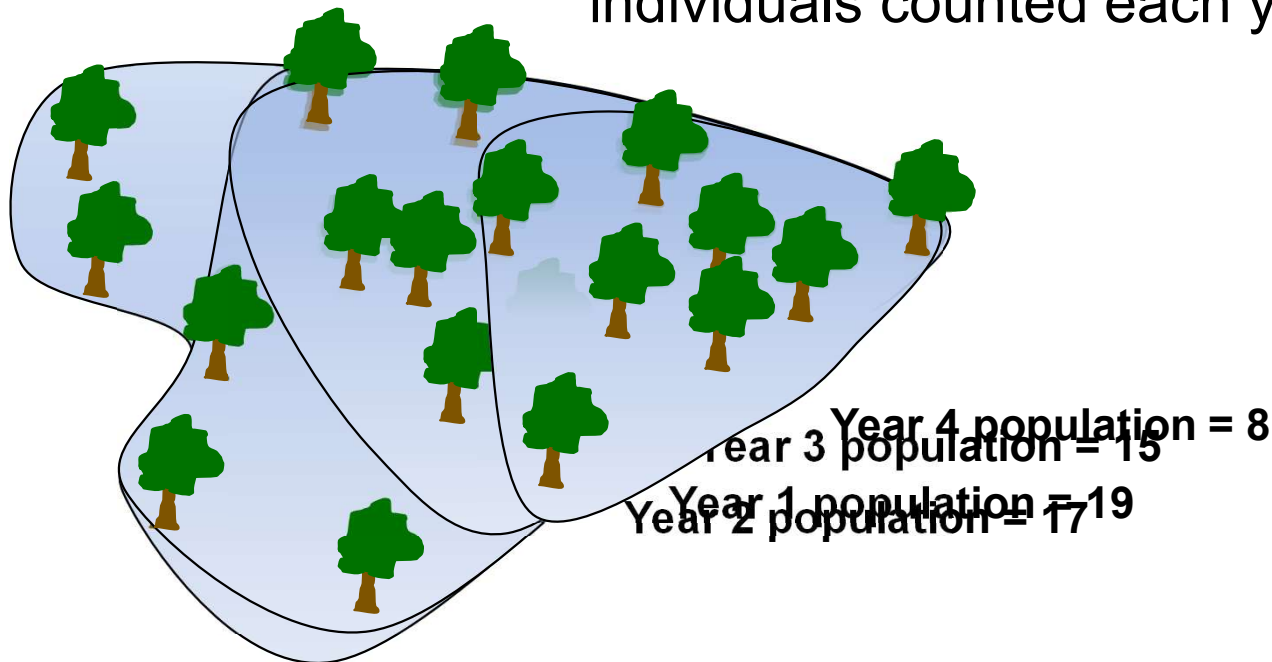
**C. Small population size and decline**



# Observed

Observed information is directly based on well-documented observations of all known individuals in the population.

For example: **entire** global population occurs in only one area and **all** individuals counted each year

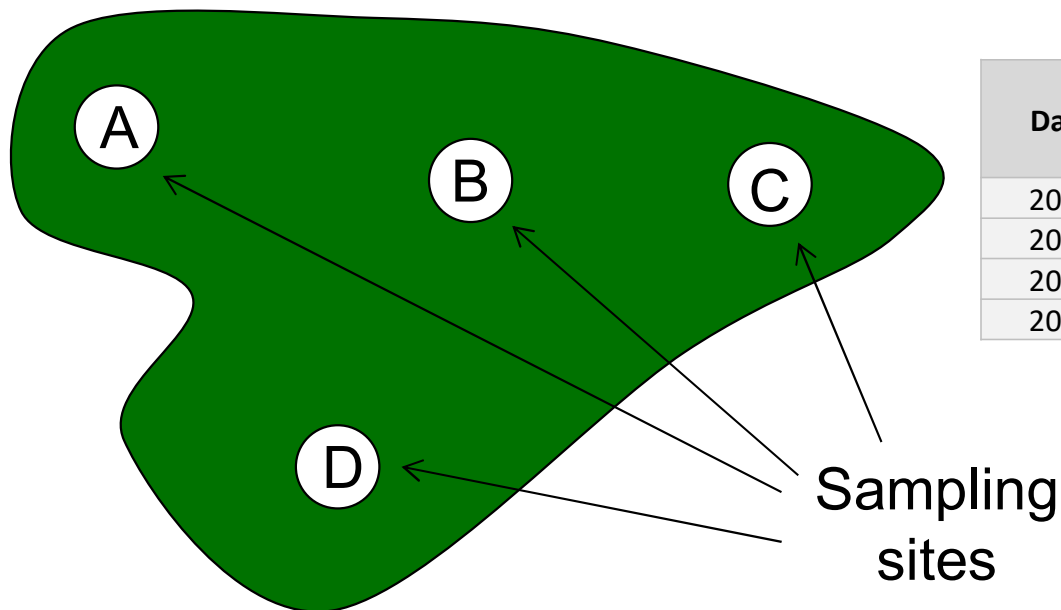


**Observed reduction of  
58% over 4 years**

## Estimated

Estimated information is based on calculations that may involve **assumptions** and/or **interpolations in time** (in the past).

For example: repeated surveys of sample sites across total range



Date	Site A	Site B	Site C	Site D	All	Population size estimate across total range
2005	105	110	210	59	484	2,000
2006	101	107	70	40	318	1,300
2007	90	100	25	42	257	1,000
2008	63	81	0	33	177	700

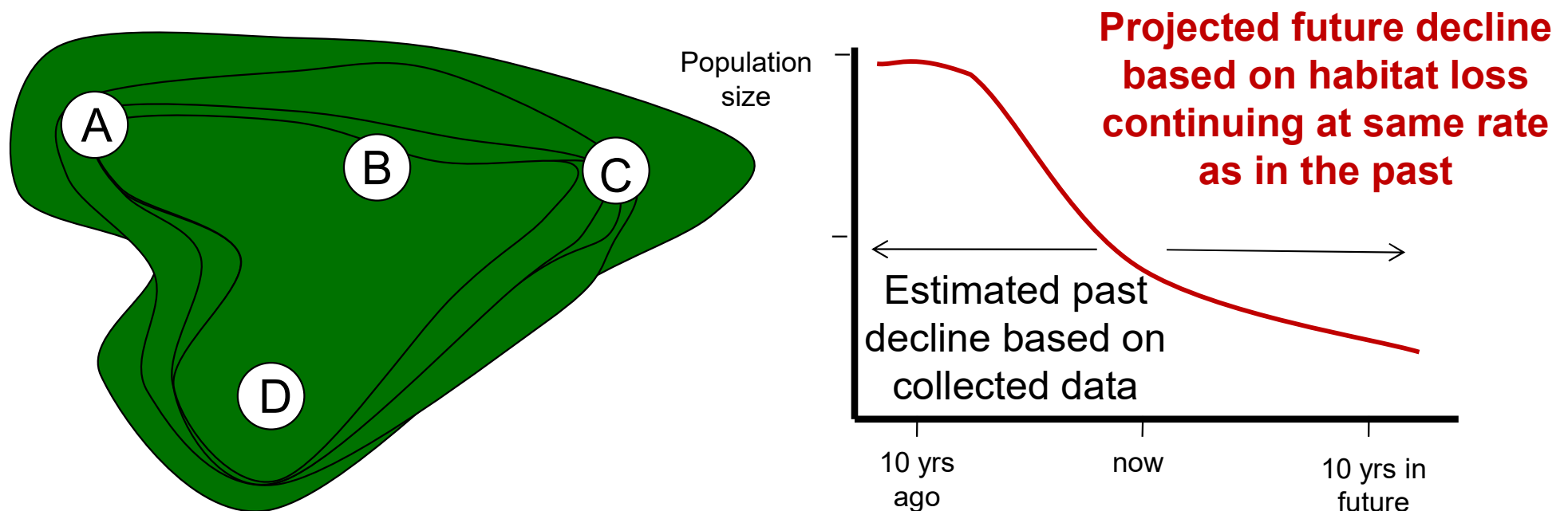


**Estimated 65% reduction between 2005 and 2008**

## Projected

Projected information is the same as “estimated”, but the variable of interest is extrapolated in time **towards the future**

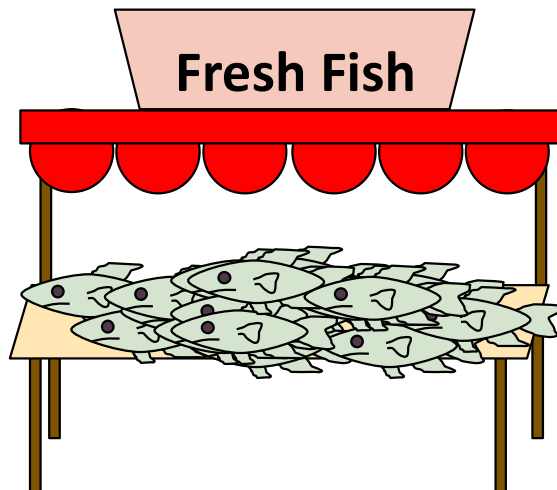
For example: repeated surveys of sample sites across total range with knowledge of ongoing causes of population decline



## Inferred

Inferred information is based on variables that are **indirectly** related to the variable of interest, but in the **same general type of units** (e.g. number of individuals or area or number of subpopulations). Relies on **more assumptions** than estimated data.

For example: Past and current population sizes are not known, but trade figures for that species have declined over time.



**Inferred continuing decline in population size based on decline in trade statistics for this species**

## Inferred

### Examples:

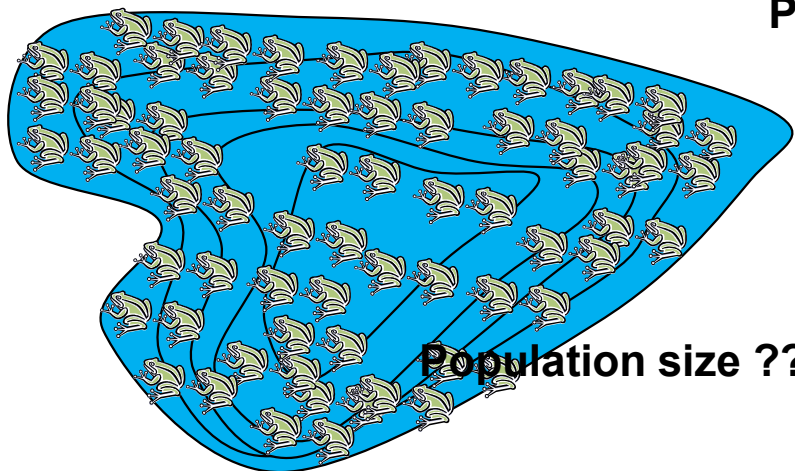
- Continuing decline in population size inferred from declining trade statistics
- Continuing decline in area of occupancy inferred from rate of habitat loss
- Population reduction (% decline) inferred from change in catch statistics (e.g. CPUE)

Based on **indirect evidence** – on variables that are **indirectly** related to the variable of interest, but in the **same general type of units** (e.g. number of individuals or area or number of subpopulations). Relies on **more assumptions** than estimated/projected data.

## Suspected

Suspected information is based on **circumstantial** evidence, or on variables in **different types of units**. In general, this can be based on any factor related to population abundance or distribution.

For example: Rate of habitat loss is known, but past and current population sizes **are unknown**.



Population size ???

- **Suspected population reduction of e.g., >50% based on 75% of habitat being lost**
- *Can infer a continuing decline in habitat quality or size of AOO, but suspect a reduction in population size at a specific rate (%)*

# Dealing with data uncertainty

**Uncertainty in the data itself (different to the lack of data) should also be considered in a Red List assessment**

For example: A species has a range of population size estimates from 3 separate studies.

**Study A:** Population size = 100-200 (Endangered)

**Study B:** Population size = 200-350 (Endangered or Vulnerable)

**Study C:** Population size = 280-410 (Vulnerable)



# Dealing with data uncertainty

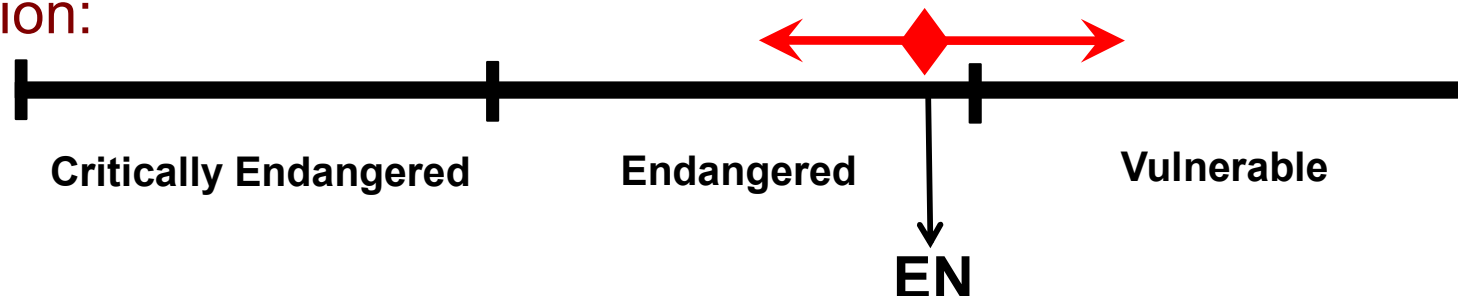
1. Record the range of possible values based on the available studies:

“Based on the studies A, B and C, the current population size is between 100 and 410”

2. State the range of potential Red List Categories that may be used based on the range of data:



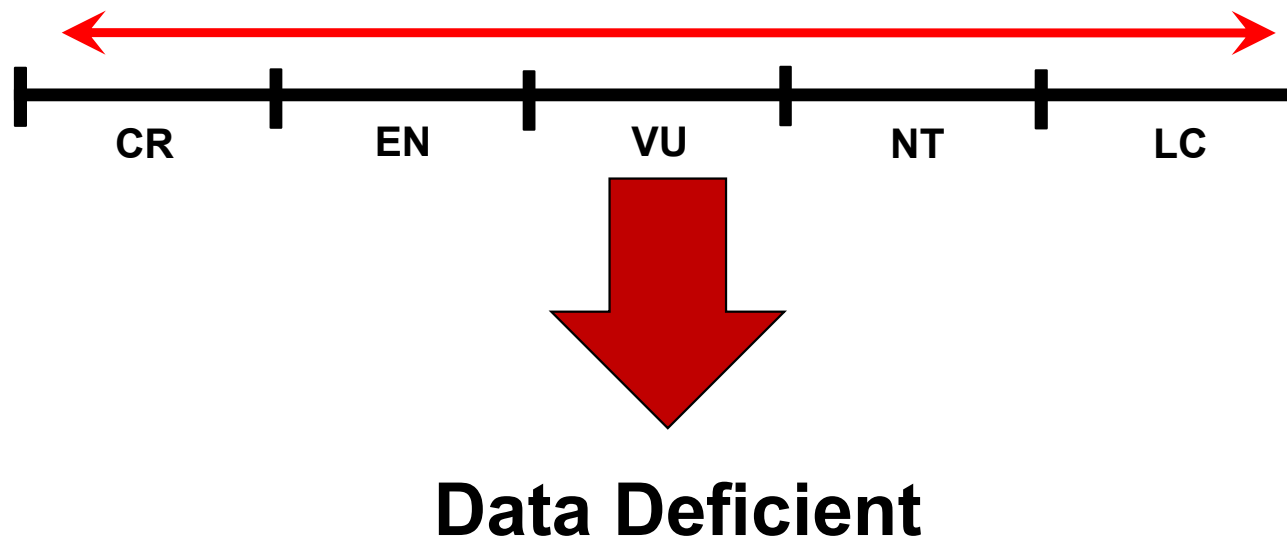
3. Select one of these categories using all available information (on population size, trends, habitat status, ongoing threats, etc.) to justify your decision:





# Dealing with data uncertainty

4. Species with **VERY** uncertain data (suggesting in a very wide range of potential categories) should be listed as Data Deficient.





# Red List Categories and Data Quality exercise

## (20 minutes)

1. Work in groups of 2-3 people.
2. You have 10 minutes to:
  - Read through the five multiple-choice questions provided and, as a group, decide which is the correct answer.
3. After 10 minutes the Red List Trainer will go through each question and provide the answers.