Brussels *Psittacidae*
Impacts, risk assessment and action range

Science Facing Aliens
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Aves

BRUXELLES ENVIRONNEMENT
LEEFMILIEU BRUSSEL
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Introduction

- SOS Invasions 2006
- Research led in 2008
- Brussels Environment Survey

1. Monk Parakeet *Myiopsitta monachus*

Not developed here (easier to manage in Brussels)

T. Meeus

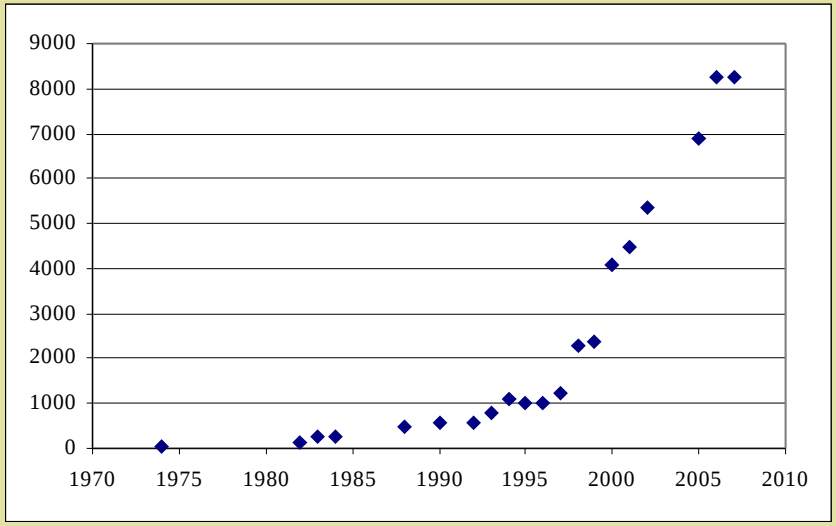
2. Ring-necked Parakeet *Psittacula krameri*

S. Moniotte

The species

- Natural distribution : Central Africa and south of Asia
- Size : 40 cm
- Diet : vegetation, seeds, fruits
- Nests : tree cavities
- Feral populations: frequent (at least 35 countries)
- Breeding season : March - July, cavities occupation from winter

Evolution of the Brussels population



Counts at roosts (M. Segers and Aves)

- One roost first, two from 2004 (max: 8.250 birds in 2007)
- Distribution in Belgium : Brussels and surroundings, local patches
- Feeding by man
- Invasive potential: further massive increase not excluded (London)

Preferential places for actions

- Flying lines => Brussels roosts
- Action taken at roosts will concern most of the national population.

Present and potential impacts

- Impact on crops of feral population (not observed in Brussels): Very localised, global impact acceptable (fruit crops in GB)
- Impact on vegetation :

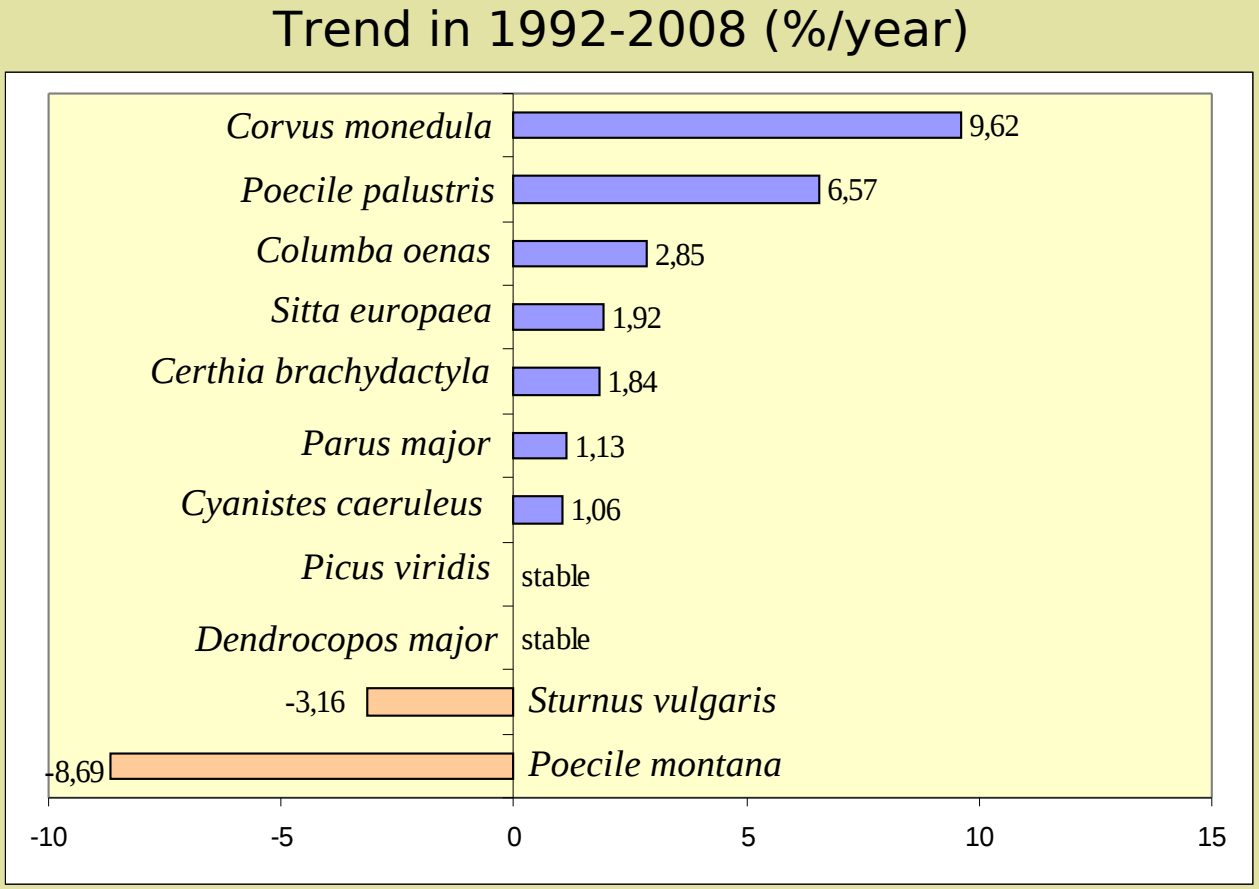
  Very localised, global impact acceptable
- Pathologies transmission : Influenza virus, Newcastle disease
- Impact on indigenous fauna

Present and potential impacts

- Impact on indigenous fauna: competition for cavities:
  - This aspect is at present the main threat of the species
  - Bats + Avifauna (enlarging of cavity entrance)
  - Bats => very difficult to study
  - Literature: only one case of suggested impact on Nuthatch (Strubbe & Matthysen, 2007)
  - Evidence of a negative impact on Nuthatch when competition is forced (Strubbe & Matthysen, 2009)

Present and potential impacts

- Point counts : cavity nesters in good health



Present and potential impacts

- Point counts 1992-2008: cavity nesters in good health
- Research in 2002 in highest density areas (75t/km^2 in N-W of Brussels) :
  - normal abundances of indigenous cavity nesters
  - free cavities => old trees, excavating behaviour
- Further point counts analyse: covariable “Ring-necked Parakeet”
  - No negative impact on cavity nesters trends
  - Positive impact on Green Woodpecker, Blue Tit, Great Tit (less significant) and Short-toed Treecreeper

But...

- Cavity supply is important at present, but will sharply decrease with the regeneration of tree settlements
- Necessity of constant monitoring to detect an impact that can arise if holes availability declines

Present and potential impacts

- Conclusions
  - Potential negative impact on cavity-nester birds in the short-term, even if the present impact is positive!
  - Could be environment management, and particularly old trees preservation, the key of the non appearance of a negative impact on cavity nesting birds?

Risks assessment

- UK non-native organism risk assessment scheme (risks for environment and socio-economy)
  - low to medium risk
  - Necessity to keep on the monitoring

- Guidelines for environmental impact assessment and list classification of non-native organisms in Belgium (risks for Belgian biodiversity)
  - Between categories B (Watch list) and C (low environmental risk)

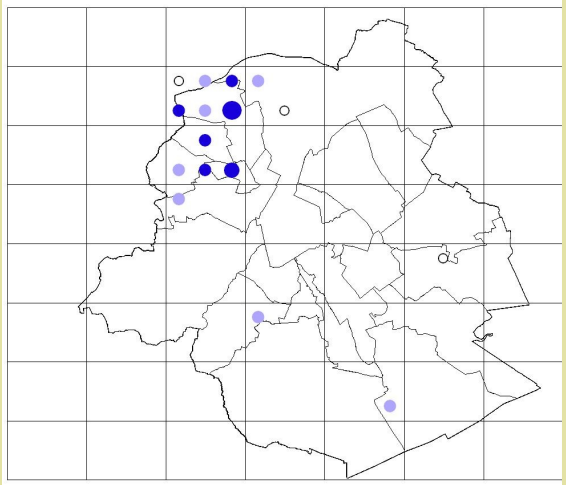
3. Alexandrine Parakeet
Psittacula eupatria

The species

- Natural distribution : mostly from India to Vietnam
- Feral populations => scarce
- Association with the Ring-necked Parakeet

Evolution of the Brussels population

- Fast increase:
  - first observations in 1998
  - 6 breeding pairs in 1999
  - 10-15 b.p. in 2000
  - 35-40 b.p. in 2004



Weiserbs & Jacob, 2007

- Most located in N-W of Brussels
- Distribution in Belgium: Brussels, some possible cases in the Northern surroundings
- Invasive potential: a strong increase has to be expected

Present and potential impacts

! Few examples: // Ring-necked Parakeet

- Impact on crops
- Impact on vegetation
- Pathologies transmission
- Impact on indigenous fauna

Present and potential impacts

- Conclusions:
  - Low numbers => weak present impacts
  - Additive to Ring-necked Parakeet impacts
  - A strong increase has to be considered, going with growing impacts

Risks assessment

- UK non-native organism risk assessment scheme (risks for environment and socio-economy)
  - low to medium risk
  - Necessity to keep on monitoring
- Guidelines for environmental impact assessment and list classification of non-native organisms in Belgium (risks for Belgian biodiversity)
  - Between categories B (Watch list) et C (low environmental risk)
  - Few examples => caution, regular new assessments needed

Preferential places for actions

- Roosts, probably draining the whole population (flying lines), represent preferential action sites

Actions range

Species targeted measures:

- Catching attempt at nesting sites in 1999
- Present population too important for catching at nest
- No targeted measures

Actions range

- Common measures – feeding by human
- Measures for both *Psittacula*
  - Soft action: Competition for cavities level
    - Set nesting boxes
    - Keep old trees
  - Stronger action : sterilize

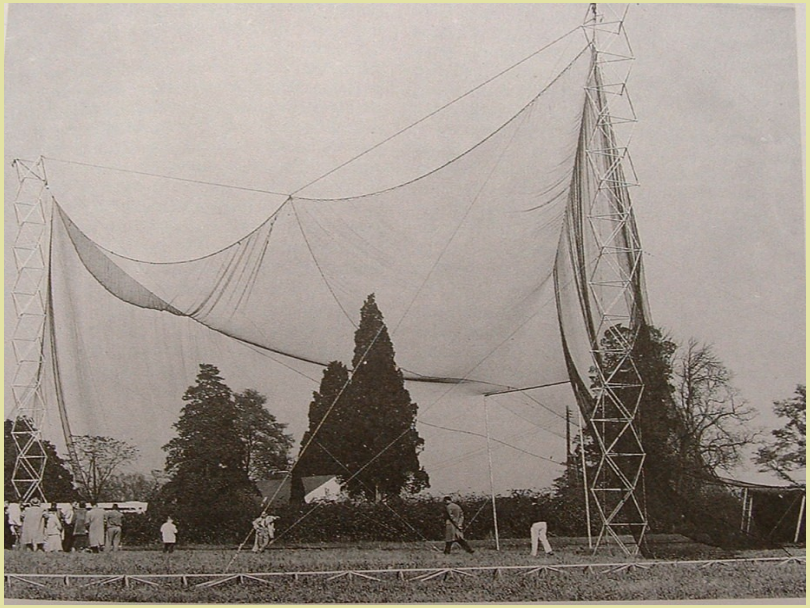
Sterilize

- Chemical option (considered in GB)

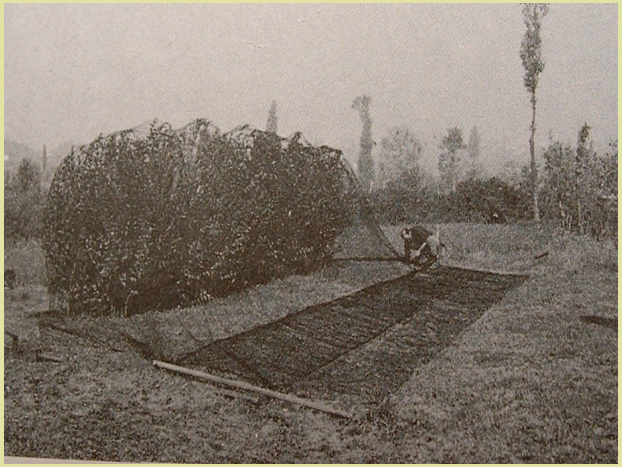
  - Catch birds at roosts

Catching in practice

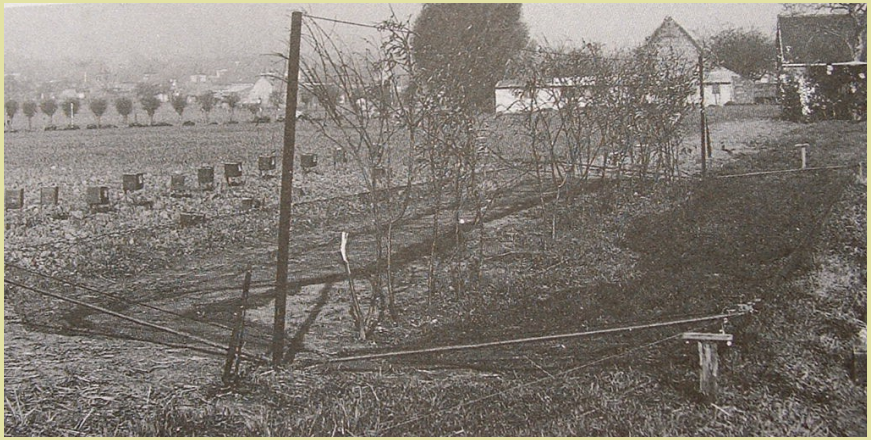
Fixed Net



Clap net



Double Clap net



Pictures : Bub, 1991

Catching in practice

Cannon netting

Pictures : Bub, 1991

Sterilize

- Chemical option (considered in GB)

  - Catch all birds

  - Several days caged (people information)

  - Diazacon: enzyme inhibition in the process of steroïd synthesis (Monk Parakeet, corvids)
  - Effectiveness to test (75 mg/kg?)
  - Persistence
  - Attractive package

Actions range

- Common measures – human feeding
- Measures for both *Psittacula*
  - Soft action: Competition for cavities level
  - Stronger action : sterilize
  - Strongest : eradicate
    - Container
    - Inappropriate

Discussion: which action?

- Factors of influence
  - Action at low level of abundance
  - … precaution principle
  - >< adapt measure to impact
  - No local destructions
  - People reaction

Acknowledgements

- Brussels Environment (IBGE-BIM)
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