# Wild boar magament in relation to ASF

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# Background

SCIENTIFIC REPORT OF EFSA, 2010

Scientific Opinion on African Swine Fever;

SCIENTIFIC REPORT OF EFSA, 2014

Scientific Opinion on African swine fever (update of 2010);

Evaluation of possible mitigation measures to prevent introduction and spread of African swine fever virus through wild boar;

# Management of ASF in wild boars
# ASF eradication/control

- No vaccination;

- At present it is possible only:

- Modulate Hunting Strategies
- Modify Artificial Feeding Strategies
- Capture and sterilization

# Hunting strategies

- Depopulation
- Selective hunting
- Hunting ban

- Each strategy has to consider:
- Promptness;
- Acceptability;
- Feasibility;
- side effects on ASF spread;

# Depopulation

- Depopulation means to eliminate almost 80% of the REPRODUCTIVE stock of a wild boar population;
- In practice, hunting from October to February, it means to shot more than 90% of the post-reproductive population;
- Wild boar estimates are imprecise (usually under-estimation of 20-30%);
- Nobody knows at which wild boar density ASF virus will fade out;

# Depopulation

- Promptness: is almost impossible to shot 90% of a wild boar in a short time (less than 3 months); from the ecological perspective it means the local extinction of the wild boar;

- Acceptability: hunters will not accept to eradicate their game species; wild boar is also an important prey for large predators (Wolf, Brown Bear etc.)

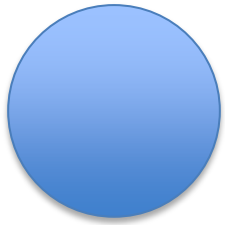
- Feasibility: impossible to shot 90% of the post-reproductive population before the next reproductive season (April)

# Depopulation side effects

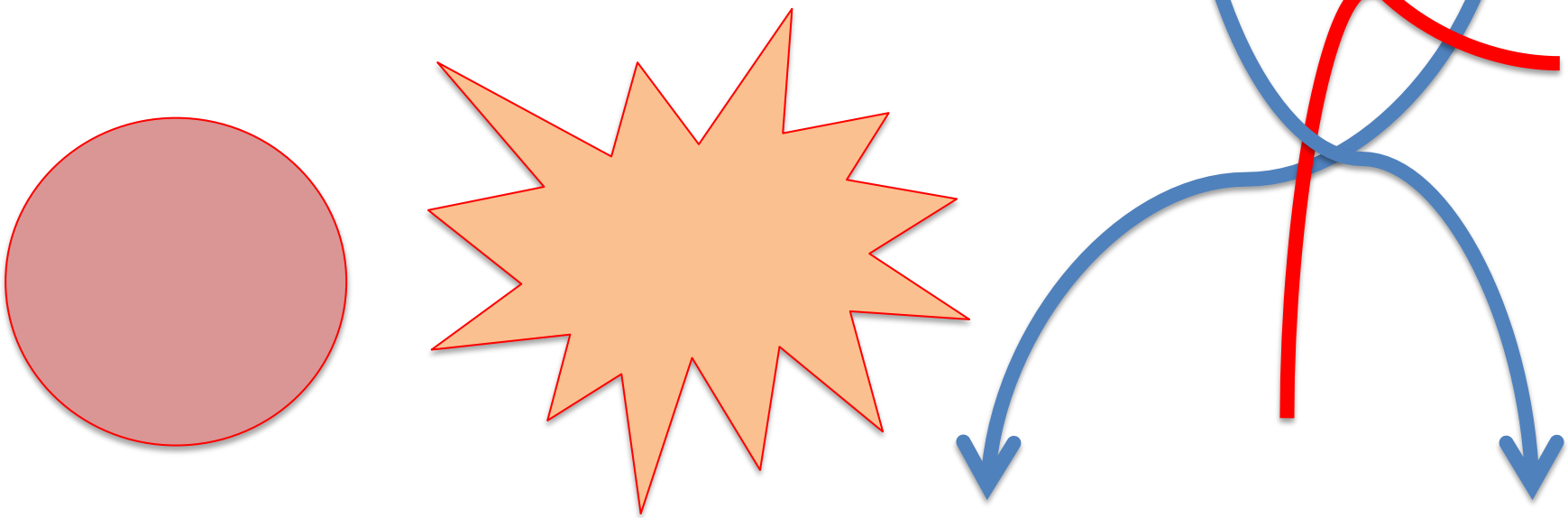
- Increasing of the wild boar home ranges and thus their encounter rate;
- Star shaped home ranges in response to disturbance;
- Chaotic, long range, movements due to social group disruption; increased probability of new outbreaks or incursions in free areas;
- Home range: size of the vital area

# Home range size variations

Normal home range



Home range shape when depopulation



# Depopulation

- Imprecise wild boar size estimates are use to reach an unknown threshold density for ASF eradication through a not accepted and not feasible hunting effort;

- Depopulation in absence of - biosecurity in hunting procedures - increases the probability of spreading the virus to domestic pigs;

- Side effects are prevalent considering the feasibility of the intervention;

# Selective hunting

- A specific wild boar age and/or gender class is overhunted in order to decrease the whole population size;
- The hunting bag is usually composted by 60% of juveniles, 30% of sub-adults and 10% of adults;
- Generally is requested to increase the percentage of the sub-adult fraction of the population;

# Selective hunting

- Selective hunting has been already proposed (soft hunting) for the eradication of CSF in wild boar in central Europe.
- It is a medium term strategy (~ 5 years)
- According to the central-south European demographic data, overhunting of selected female age classes could drive to a limited decrease of the population (10%/year);
- Lack of data for north Europe

# Selective hunting

- Promptness: medium term strategy;
- Acceptability: high
- Feasibility: low
- Side effects: adult animals will deliver more piglets; sub-adult animals will be soon recruited in the reproductive fraction of the population;

# Hunting ban

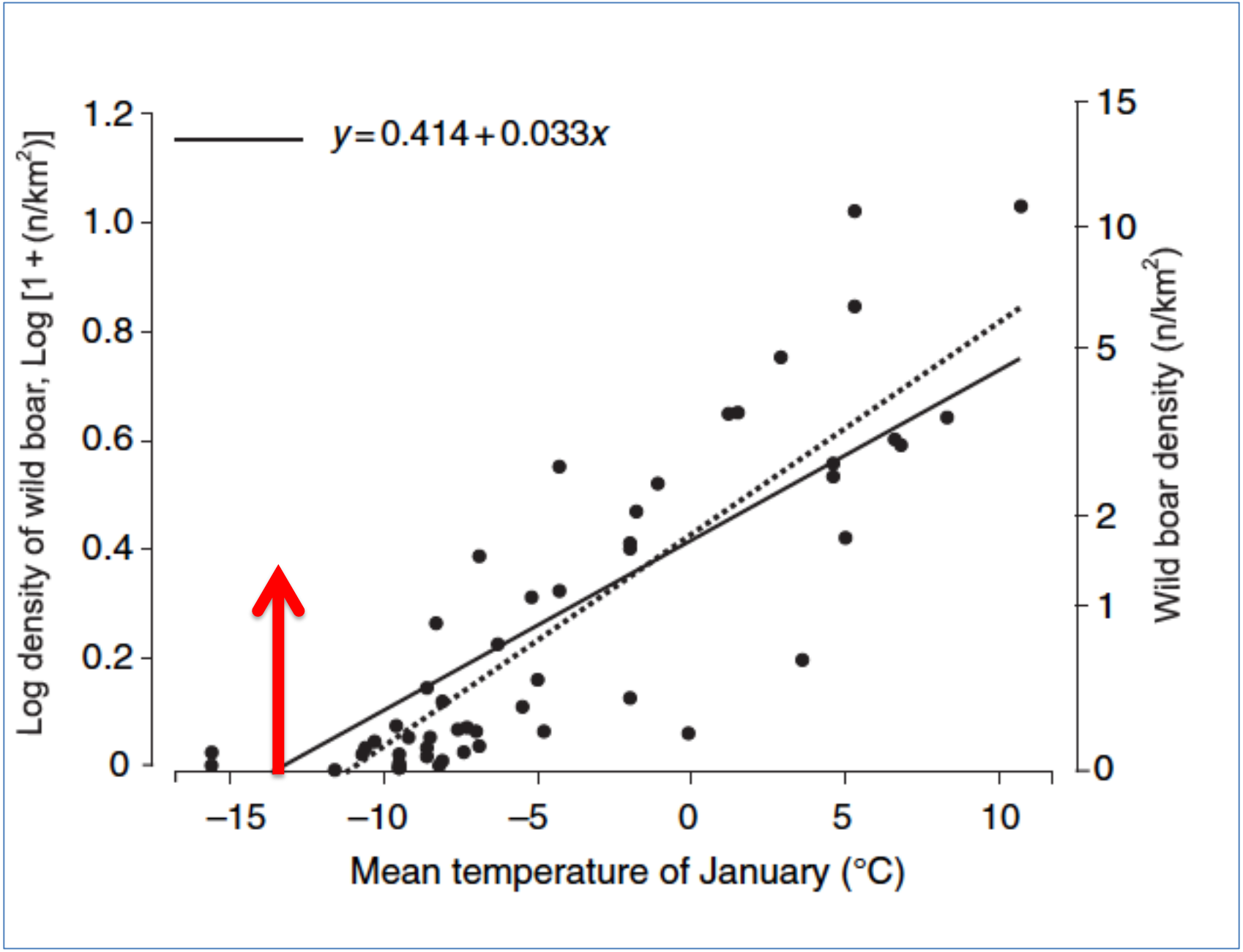
- Avoid disturbance;
- Avoid risk of further spread of the virus when dressing, transporting shot animals;

# Hunting ban

- Promptness: high
- Feasibility: high
- Acceptability: low
- Side effects: increased agricultural damages; medium term increase of the population; limited sample size for active surveillance;

# Artificial winter feeding

- At present artificial feeding is aimed in reducing the natural winter mortality
- It allows high wild boar densities even in areas where wild boars could hardly survive to the winter;


y=0.414+0.033x
Log density of wild boar, Log [1 + (n/km²)]
Wild boar density (n/km²)
Mean temperature of January (°C)
1.2
1.0
0.8
0.6
0.4
0.2
0
15
10
5
2
1
0
–15
–10
–5
0
5
10

# Artificial winter feeding

- It is believed to reduce the winter home range and thus the contact rates among wild boars;
- It reduces winter crop damages;
- It increases the probability of hunters to encounter wild boars (hunting towers)

# WINTER FEEDING

- Lithuania: 10.000 hectares => 125 tons/year
- Estonia => 50 tons cereals/year for feeding points (50 tons year are enough to grow approximately 100 fattening pigs)
- Ukraine => up to  5-7 tons for each estimated wild boar
- Poland => 143 million tons/year (PLOS, 2014)

# BAN of winter feeding

- Increases winter mortality and thus REDUCES population density
- Reduces many ecological undesired side-effects (local extinction of plants, super-predation etc.);

# BAN of winter feeding

- Promptness: high
- Acceptability: low among hunters and local farmers (local market for low quality cereals and byproducts);
- Feasibility: high
- Side effects: increased home ranges; increased winter crop damages

# Capture and sterilization

- Females are captured and injected with sterilizing drugs;
- The sterilizing effect lasts for about 2 years;
- Decreasing of the population without the side effects of hunting;

# Capture and sterilization

- Lack of demographic data to validate the strategy;
- Italy, France, Germany….need to capture almost 70% of females to maintain stable the population;
- Meat consumption of chemical sterilized animals
- Cost of capture extremely high (1.000 euro/trap, personnel, baiting of traps, etc.)

# Capture and sterilization

- Promptness: low
- Acceptability: low among hunters, high among conservationists;
- Feasibility: low (if none)
- Side effects: none important;

A dream rather than a management option

# Contrasting measures

- Winter feeding and selective hunting;
- Winter feeding and depopulation;
- Winter feeding and hunting ban

# ASF and Wild Boars: final considerations

- There are no magical receipts;
- Each strategy has is own side effects and probability of success;
- Technically the less dangerous strategy would be **hunting ban and feeding ban together**;
- Contrasting measures should be avoided;
- Still lack of very important data that would help in better evaluate strategies;

Thank you for you attention

Any question ?