Historical perspective and current state deer conservation and sport hunting in Japan

by
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Shiretoko in Hokkaido Island
Land Utilization (378,000 km²)

- Paddy rice, wheat, and barley
- Paddy rice
- Wheat, barley, and oats
- Forest

Source: Ministry of Agriculture, Forestry, and Fisheries 2012
Ezo sika deer (Cervus nippon yesoyensis)
Life span: 6-8 years
Diet: Grasses and herbs (Summer)
   Tree barks and bamboo leaves (Winter)
Reproductive maturity: Yearling
   2.5 yrs (90%)

Honshu sika deer (Cervus nippon aplodontus)
Life span: 6-8 years (Female>Male)
Diet: Grasses and herbs (Summer)
   Tree barks and bamboo leaves (Winter)
Reproductive maturity: Yearling

(Ministry of Agriculture, Forestry, and Fisheries 2012)
Objectives

1. History of Sika deer population
2. Current management
3. Sport hunting in Japan
1873-1879 in Hokkaido

Sika deer population started declining

Overexploitation (annually harvested 61,000-110,000 deer)
- Marketing (canned venison)

Habitat loss due to agricultural expansion

Intensive timber harvesting

Heavy snowfalls
1890-1900 & 1920-1952 in Hokkaido

Near extinction

Legislated protection by the Hokkaido Government
Ban on hunting during 1890-1900 & 1920-1952
Ezo wolf (Canis lupus hattai) became extinct (1896)
Japanese wolf (Canis lupus hodophilax) became extinct (1906)
  - Agriculture, less deer, politics, disease, etc

Threatened level during 1920-1952
Established the Hunting Club via military needs
Illegal hunts during the World War II

(Hokkaido University 2016)
1955-1989 in Hokkaido

Population started recovering

The Hokkaido Government implemented bucks-only harvest

1955-65: ≤3,000 bucks were annually harvested
1970s: Population started increasing in east Hokkaido
1988: ≥10,000 harvested animals (including nuisance control)

(Kaji et al. 2010)
1990- in Hokkaido

Population started recovering

The Hokkaido Government implemented female harvest

1994-96: 455 million dollars loss for agriculture and forestry
1998: Aggressive female harvest started (2 females)
2004: Unlimited female harvest started (no change in harvest rate)

(Kaji et al. 2010)
Current wildlife management

Loss of native plants have increased at each National Park in Japan.
- A lack of hunters
- Less remaining snow on the mountain
- Abandoned croplands caused the expansion of their habitats

(Ministry of Environment in Japan 2018)
Population estimates

Indices:
- Aerial surveys
- Spotlight counts,
- Catch per unit effort = Number of deer harvested per hunter-day
- Sighting per unit effort = Number of deer sighted per hunter-day
- Damage to agriculture and forestry
Population estimates – aerial surveys

Pros: time, sex ratio, fawn: doe ratio, distribution, habitat condition
Cons: cost (4G USD/h), observation error, difficult detection in forests
Population estimates – spotlight census

Pros: cost, time, density, sex ratio, fawn: doe ratio, distribution
Cons: observation error, low detectability

(Kyushu University, Hokkaido University 2018)
Population estimates – CPUE

CPUE = Catch/harvest Per Unit Effort
- Number of deer harvested per hunter-day

Pros: cost, density, sex ratio, distribution
Cons: Data variation (various harvest methods, harvest regulations, skill sets, etc.)
Population estimates – SPUE

SPUE = Sighting Per Unit Effort
- Number of deer seen per hunter-day

Pros: cost, density, sex ratio, distribution
Cons: Data variation (harvest regulations, hunters, etc)

(Yodogawa era news, Takahiro 2018)
Wildlife management - Local

Install high fences to avoid deer invasion to croplands

Population control by hunters

(Ministry of Environment in Japan, Hokkaido Research Organization 2018)
Capturing/harvesting methods

Firearms (Rifle and shotgun)
- Makigari method = Hunt area surrounded by multiple hunters
- Hunting dog
- Stalking
- Sharpshooting from vehicle

Snare trap

(Seven-mack, Nikko shi  2008 & 2018)
Hunter’s population

Hunters at 20-49 years old declined since 1995

Year (10,000)

Age
- 20-20
- 30-39
- 40-49
- 50-59
- 60-

Age distribution of hunters in years 1975 to 2012.

Ministry of Agriculture, Forestry, and Fisheries 2018
Hunter nippon: categorized as endangered species. Drastic declines in young hunters due to a lack of exchange information of hunting skillsets between multiple generations.

(Ryoyukai 2018)
Estimated population 2020-2110

Aging rate

- 65+
- 15-64
- ≤14

(Ministry of internal affairs and communications 2013)
Depopulation in rural areas will keep increasing for the next decades

Depopulation in rural areas = Suitable habitats for deer
Depopulation in rural areas

(Ministry of agriculture, forestry, and fisheries 2018)
Firearms & Hunting License - Laws

Firearms
0.3% of population own firearms (30% in US)
Minimum age: 20 years old
License: Courses and written and practical exams
  - Annually renew documents

Hunting License
0.16% of population (7% in US)
No foreigners allowed
Minimum age: 20 years old
  - Snare trap (Min. = 18 yrs)
  - Shotgun
  - Rifle (10 consecutive yrs experience of shotgun)
License: Courses and written and practical exams
  - Annually renew documents
Hunting - Courses

Courses for adult (Japan)
Conservation Leaders for Tomorrow (US)
Youth hunting program (US)
Opportunities

1,000 ha