

The effects of Agr- environment Program on Biodiversity in ChungNam, Korea



ChungNam Institute

CHUNG OK-SIK

BACKGROUND 연구배경

Agriculture and rural in Korea

Goals in Quantitative production

- Mechanization
- A large amount of Pesticide, Fertilizer usage

Population aging and decrease

- Labor shortage
- rural community collapse



habitat loss, pollution, poisoning

- Biodiversity Loss
- Injurious Insect increase & beneficial insect decrease



Agriculture and rural community Will not last

Hypothesis 가설

Factors affecting living species

▪ Food

- Key Factors to species.
- Seeds, insects, amphibians living in rice field act as foods.

▪ Water

- Key Factors to species
- but, this program will have little affected by water in rice paddies.

▪ Cover

- shelter, resting place, nest etc.
- The program will provide a variety of cover to species.
- especially , various water depths, open water and bush will served.

 **Agri-environment program will increase plant and animal species, populations**

Info. Agri-environment 농업생태환경프로그램

Subsection of Agr-environment program

Making hedge

Plant in ridge between in rice paddies

Non-cropping

Plant for Pollen vector

Non-cutting in ridge

Making pop up wetland in winter

Making deep wetland in rice paddies



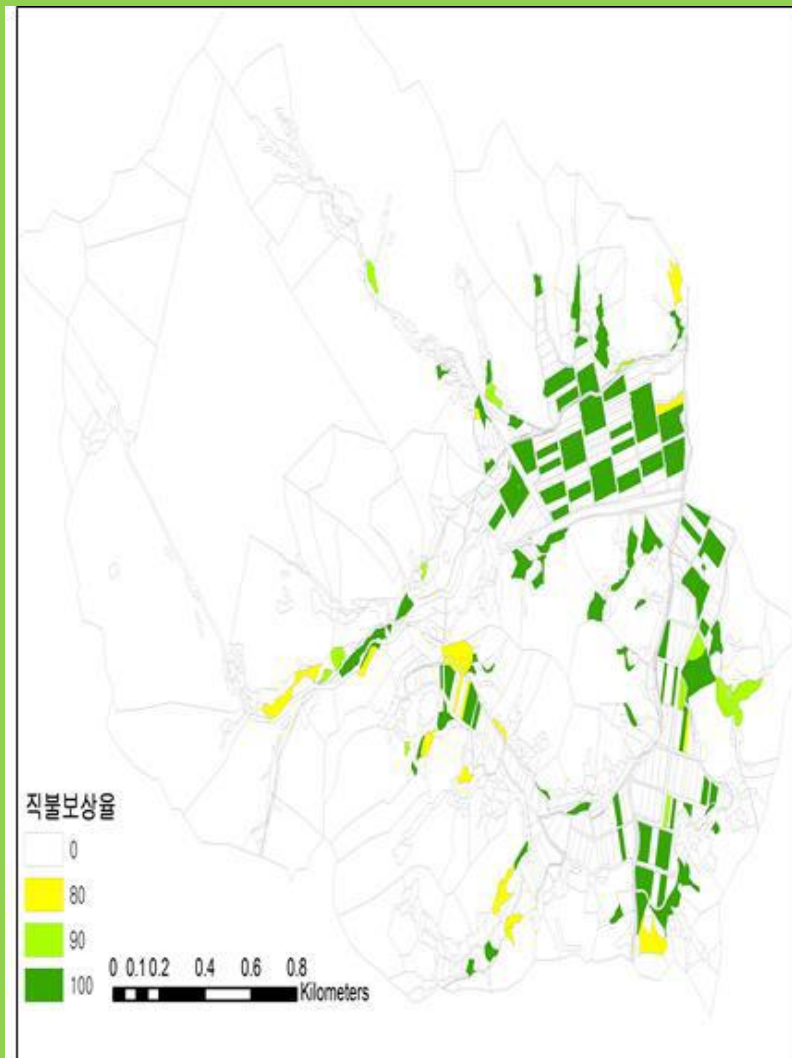
Study Area(Hwa-am village, Chongyang, ChungNam)



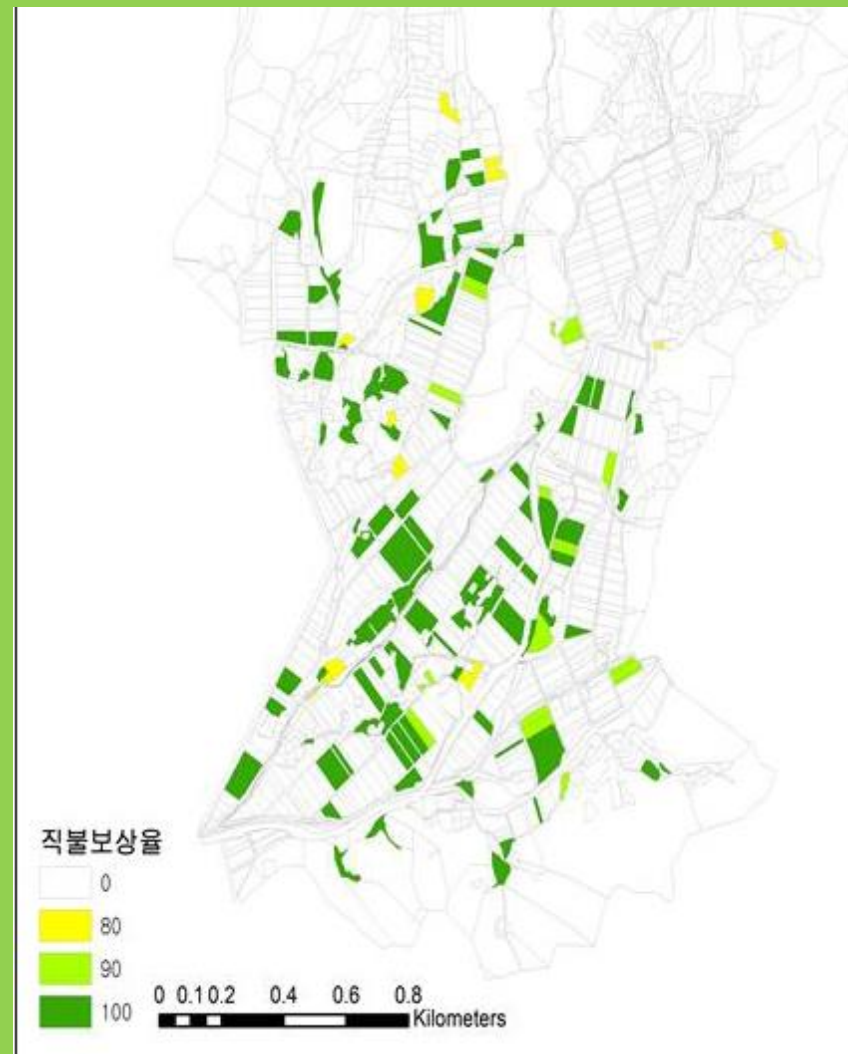
Study Area(Jang-hyun village, Boryung, ChungNam)



Sites participated in Agr-environment program



Hwa-am

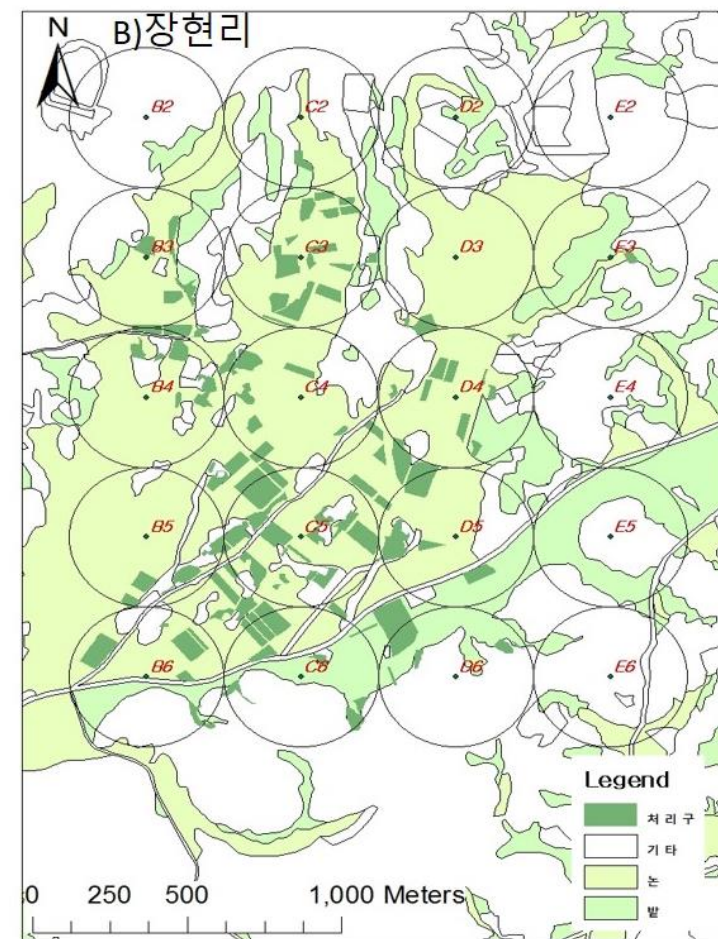
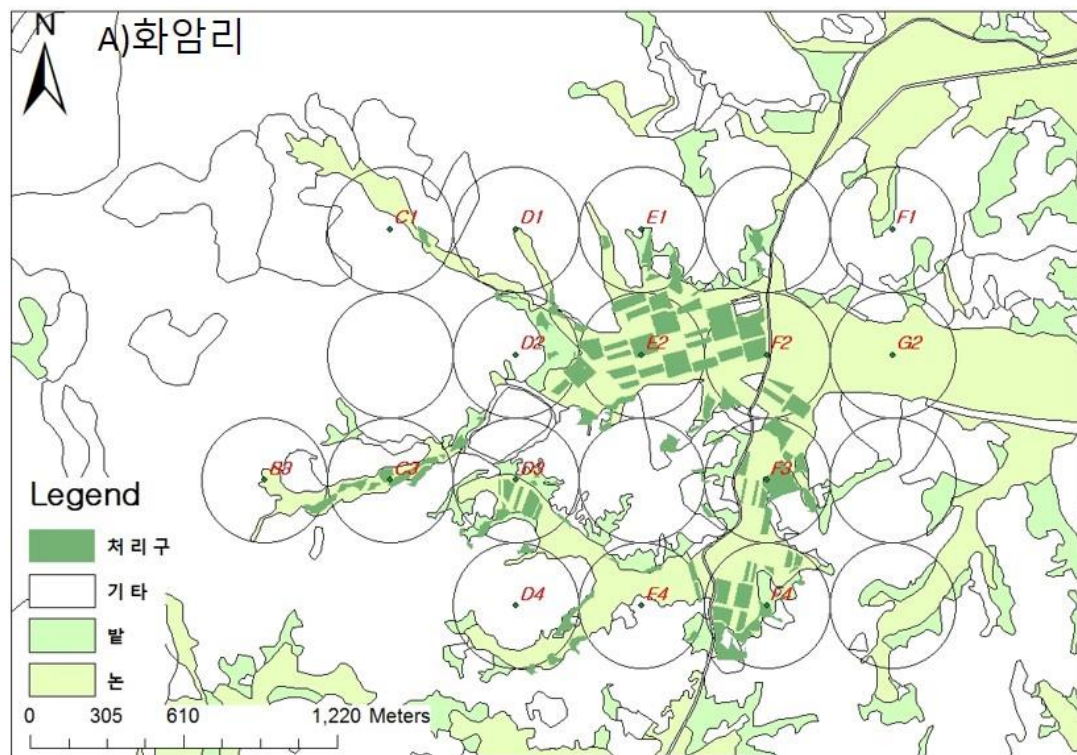


Jang-hyun

Monitoring 모니터링

Method

- BIRDS



Season		date	
Spring	10	2017-03-12, 2017-03-18, 2017-03-25 2017-04-01, 2017-04-09, 2017-04-16 2017-04-22, 2017-05-03, 2017-05-14 2017-05-21	
Summer	6	2016-06-19, 2016-06-30, 2016-07-25, 2017-06-04, 2017-06-22, 2017-07-01	Breeding season
Autumn	3	2016-09-23, 2016-10-14, 2017-11-30	
winter	9	2016-12-24, 2017-01-17, 2017-12-14 2017-12-20, 2017-12-27, 2017-12-30, 2018-01-15, 2018-01-20, 2018-01-29	Wintering season

- Point census, 10minutes per 1 spot (total=40spots)
- 28times, 4 season, 2 years

■ Insect and benthos

- 3times, 2 season, 2 years

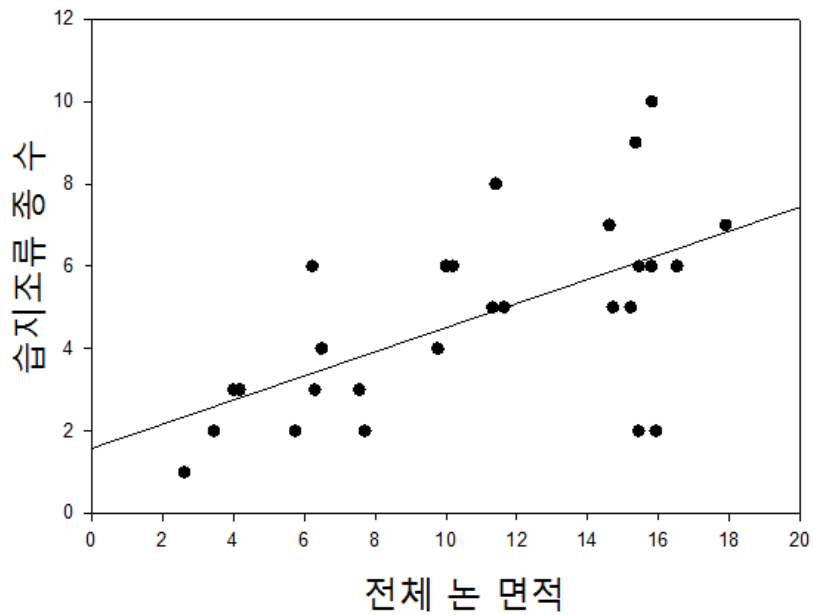
RESULT 연구 결과

Result

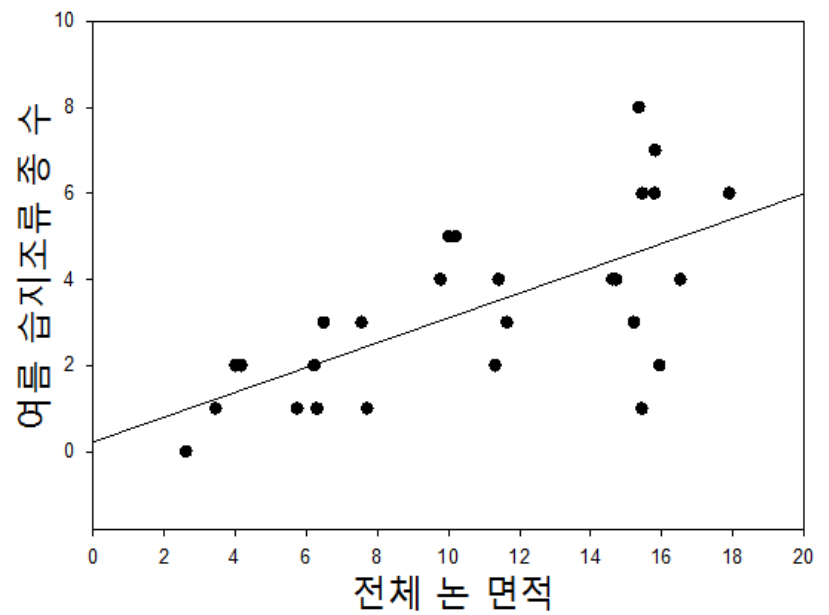
- Total : 84 Species / 8,450 individuals
- Protected Species in Korea : Bean goose, Eurasian hobby, Chinese Sparrow Hawk Sparrow Hawk, Goshawk
- Spring : 68 / 4,127 (Waterbirds : 13/261)
- Summer: 41 / 1864 (Waterbirds : 12/315)
- Autumn: 37 / 1,033 (Waterbirds : 6/29)
- Winter: 36 / 1,423 (Waterbirds : 4/25)

- WATERBIRDS SPECIES NUMBERS / AREA

Species Numbers



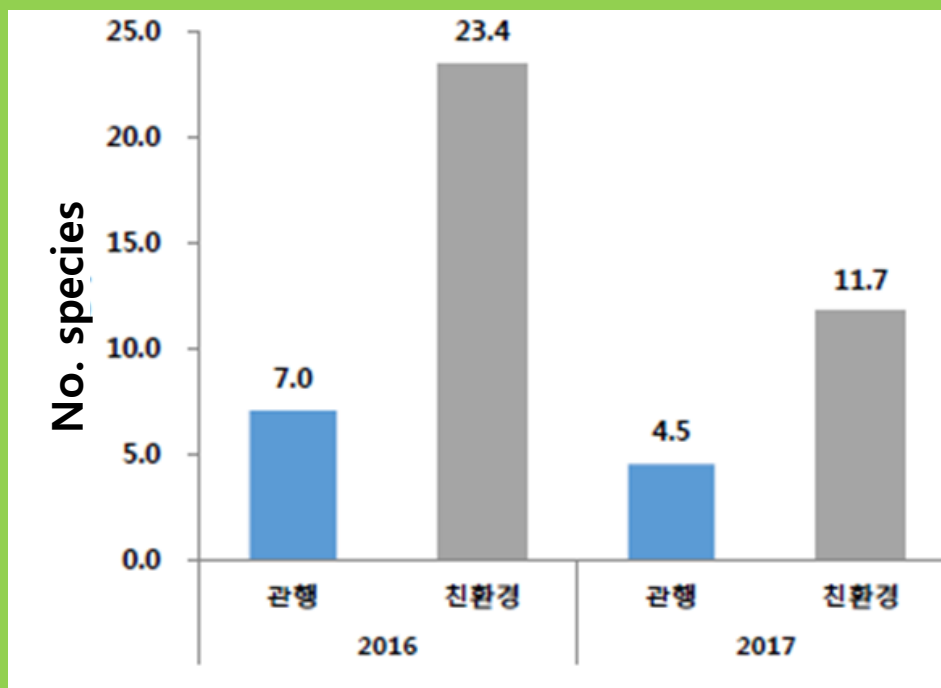
Species Numbers in summer



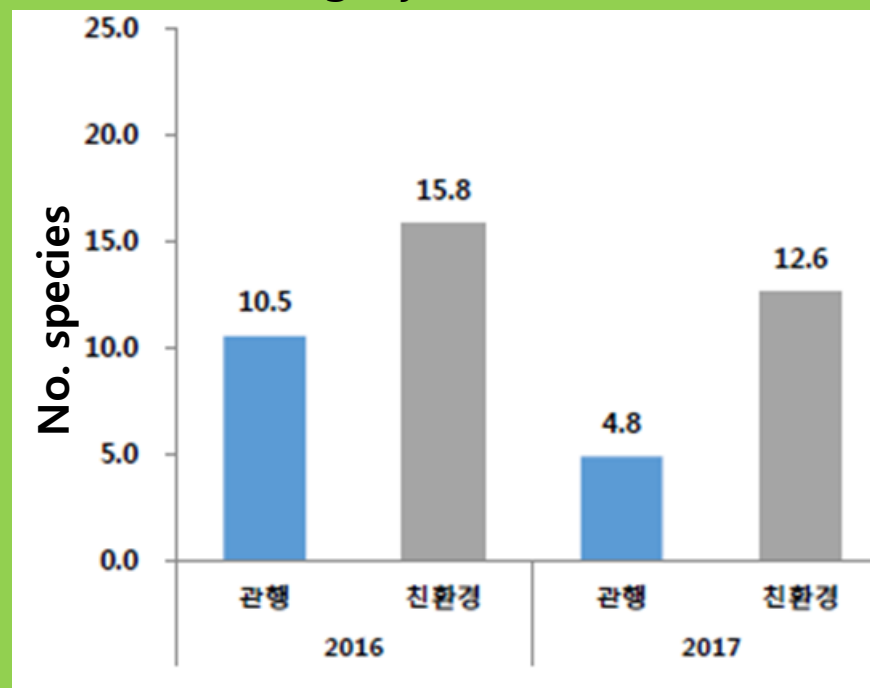
Rice Field Area

- BENTHOS number / Area

Hwa-am



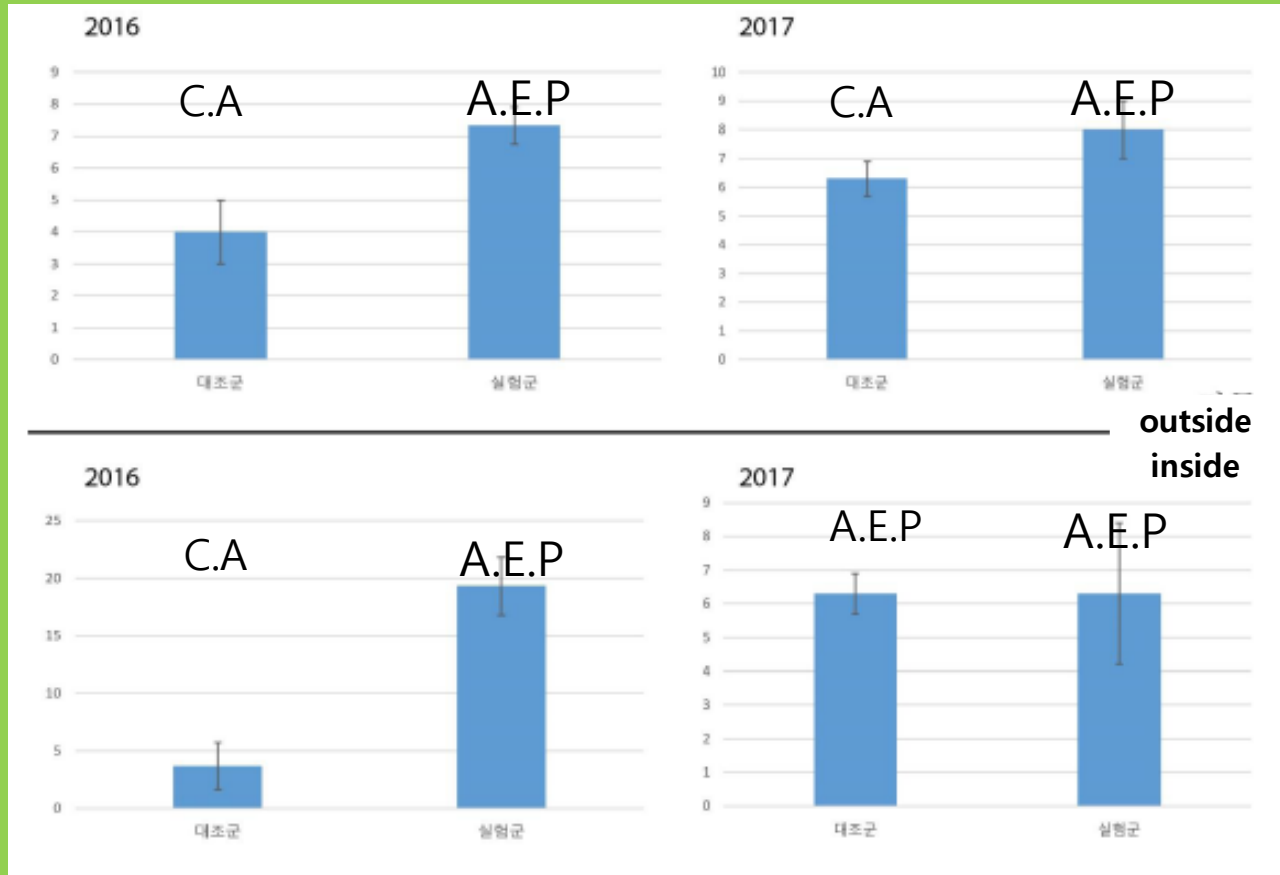
Jang-hyun



■ : A.E.P

■ : C.A(Conventional Agriculture)

- INSECT



Variation Insect in ridge (species)

- INSECT



Variation Insect in ridge (Population Numbers)

RELATED PICTURES

1





논을 찾는 큰고니



논을 찾는 갈매기류

■ BENTHOS

-Dominant Species



- Rare Species





감 사 합 니 다.