

A comparison of benthic macroinvertebrate diversity between organic farming and inorganic farming in Mueang District, KhonKaen Province

Student :Miss SujidtraLimsoongnum

Project advisor :Dr. SarunKeithmaleesatti

Department of Environmental Science, Faculty of Science , KhonKaen University. Thailand.

The aim of this study was to investigate the diversity of benthic macroinvertebrate communities between organic farming and inorganic farming. The study of benthic macroinvertebrate communities and physicochemical parameters were taken from two sites (TambonSila and TambonBuengneim), Mueang District, KhonKaen Province by point transects. The study was carried out from August to October 2009 using hand net. The standard time for collection of samples was 3 minutes per point. The results indicated that 11 orders of benthic macroinvertebrate, including 20 families and 24 species were found in inorganic farming and 11 orders 25 families and 38 species were found in organic farming. The species richness of benthic macroinvertebrates in both sites were significantly different ($p < 0.05$) and species diversity of benthic macroinvertebrates in inorganic farming calculated by using Shannon-Weiner diversity index was higher than organic farming ($H' = 3.9689$ and $H' = 2.9762$) respectively. The results of statistical analysis showed that physicochemical parameters were not significantly different ($p > 0.05$). The results suggest that the use of agricultural chemicals can change the community structure of benthic macroinvertebrates along the pollution gradient in agroecosystems.

Key word : Macroinvertebrate Diversity

A comparison of benthic macroinvertebrate diversity between organic farming and inorganic farming in Mueang District, KhonKaen Province

Student :Miss SujidtraLimsoongnurn

Project advisor :Dr. SarunKeithmaleesatti

Department of Environmental Science, Faculty of Science , KhonKaen University. Thailand.

The aim of this study was to investigate the diversity of benthic macroinvertebrate communities between organic farming and inorganic farming. The study of benthic macroinvertebrate communities and physicochemical parameters were taken from two sites (TambonSila and TambonBuengneim), Mueang District, KhonKaen Province by point transects. The study was carried out from August to October 2009 using hand net. The standard time for collection of samples was 3 minutes per point. The results indicated that 11 orders of benthic macroinvertebrate, including 20 families and 24 species were found in inorganic farming and 11 orders 25 families and 38 species were found in organic farming. The species richness of benthic macroinvertebrates in both sites were significantly different ($p < 0.05$) and species diversity of benthic macroinvertebrates in inorganic farming calculated by using Shannon-Weiner diversity index was higher than organic farming ($H' = 3.9689$ and $H' = 2.9762$) respectively. The results of statistical analysis showed that physicochemical parameters were not significantly different ($p > 0.05$). The results suggest that the use of agricultural chemicals can change the community structure of benthic macroinvertebrates along the pollution gradient in agroecosystems.

Key word : macroinvertebrate

Acute toxicity of paraquat on survival rate of Dark-sided Chorus Frog (*Microhyla heymonsi*)

Student : Miss Phattharawadee Piratae

Project advisor : Dr. Sarun Keithmaleesatti

Department of Environmental Science, Faculty of Science , Khon Kaen University. Thailand.

Paraquat is the famous herbicides which used in Thailand agricultural area. However, many reports presented that the chemical are adverse effects to aquatic fauna. Acute toxicity of paraquat on survival rate of Dark-sided Chorus Frog *Microhyla heymonsi* was studied in June 2011. Two hundred and forty tadpoles which hatched ten-hour *Microhyla heymonsi* were collected at Plastic pond Khon Kaen University. The tadpoles were separated to control group and three treatment in vivo toxicity testing groups including 1 mg/L., 5 mg/L. and 10 mg/L *in vivo*. Additionally, the acute toxicity was monitored 24, 48, 72 and 96 hour. The results in this study showed the significantly different between control and all treatment group ($p < 0.05$) at 96 hr. Furthermore, the survival rate was 100 percentages of control group. All treatment group were low survival rate. At 1mg/L, the survival rate was 13.3 percentages, moreover all die were found both 5mg/L and 10 mg/L.

Key word : Acute toxicity, Dark-sided Chorus Frog

Acute toxicity of paraquat on survival rate of Ornate Chorus Frog *Microhyla ornate*

Student :PiypornSukree

Project advisor :Dr. SarunKeithmaleesatti

Co -Adviser : Assistant Professor Department of Biology **ChanthipChunngen, Ph.D**

Faculty of Science, KhonKaen University

Paraquat is the famous herbicides which used in Thailand agricultural area. However, many reports presented that the chemical are adverse effects to aquatic fauna. Acute toxicity of paraquat on survival rate of Ornate Chorus Frog *Microhyla Ornate* was studied in June 2011. Two hundred and forty tadpoles which hatched ten-hour *Microhyla Ornate* were collected at Plastic pond KhonKaen University. The tadpoles were separated to control group and three treatment in vivo toxicity testing groups including 1 mg/L., 5 mg/L. and 10 mg/L. Additionally, the acute toxicity was monitored 24, 48, 72 and 96 hour. The results in this study showed the significantly different between control and all treatment group ($p < 0.05$) at 96 hr. Furthermore, the survival rate was 100 percentages of control group. All treatment group were low survival rate. At 1mg/L, the survival rate was 5 percentages, moreover, all die were found both 5mg/L. and 10 mg/L.

การศึกษาพิษเฉียบพลันของพาราควอทต่ออัตราการรอดของลูกออดอิ่งน้ำเต้า

นักศึกษา :นางสาวปิยะภรณ์สุชีรี

อาจารย์ที่ปรึกษาโครงการวิจัย : อ.ดร. ศรัณย์เกียรติมาลีสถิตย์

อาจารย์ที่ปรึกษาร่วม: ผศ.ดร. จันทร์ทิพย์ช่วยเงิน

ภาควิชาวิทยาศาสตร์สิ่งแวดล้อมคณะวิทยาศาสตร์มหาวิทยาลัยขอนแก่น

พาราควอทเป็นสารกำจัดศัตรูพืชที่มีการใช้อย่างแพร่หลายทางด้านการเกษตรกรรมของประเทศไทย อย่างไรก็ตามพบว่าสารพาราควอทมีพิษร้ายแรงต่อสิ่งมีชีวิตในแหล่งน้ำการศึกษาพิษเฉียบพลัน 96 ชั่วโมงของสารพาราควอทต่ออัตราการรอดของลูกออดอิ่งน้ำเต้า (*Microhyla ornate*) ทาการศึกษาระหว่างเดือน มิถุนายนพ.ศ. 2554 ลูกออดอิ่งน้ำเต้าอายุ 10 ชั่วโมงจำนวน 240 ตัวถูกเก็บมาจากสระพลาสติก มหาวิทยาลัยขอนแก่นและถูกนำมาแยกออกเป็น 3 กลุ่มทดลอง 1 กลุ่มควบคุมระดับความเข้มข้นของกลุ่มทดลองคือ 1 mg / L. , 5 mg / L. และ 10 mg / L. และทำการทดลอง 96 ชั่วโมงผลการศึกษาพบว่าอัตราการรอดของลูกออดอิ่งน้ำเต้าที่ 96 ชั่วโมงมีความแตกต่างกันอย่างมีนัยสำคัญทางสถิติ($p < 0.05$) ในทุกระดับความเข้มข้นโดยกลุ่มควบคุมมีอัตราการรอด 96 ชั่วโมงเท่ากับร้อยละ 100 กลุ่มทดลองความเข้มข้น 1 mg / L. มีอัตราการรอดร้อยละ 5 ส่วนที่ความเข้มข้น 5 mg / L. และ 10 mg / L. ลูกออดตายทั้งหมดผลการศึกษาบ่งชี้ว่าพาราควอทมีพิษเฉียบพลันต่อลูกออดอิ่งน้ำเต้า (*Microhyla ornate*)

Analysis of C/N ratio of food garbage on KhonKaenUniversitycafeteria.

Student :Miss SakunrattBuayairaksa

Project advisor :Dr. SarunKeithmaleesatti

Department of Environmental Science, Faculty of Science , KhonKaen University. Thailand.

Food waste is food discarded or lose uneaten. The important food waste sources are restaurant and cafeteria. The use of recycled food waste has many environmental benefits such as producing fertilizers, and improving soil quality. Carbon / Nitrogen (C/N) ratio in food waste at Complex food cafeteria KhonKaen University were examined in June to August 2011. The objective of this study was known as C/N ratio in KhonKaen University food. Furthermore, the information will apply to produce organic fertilizers. The results found that the moisture of food waste from Complex food cafeteria KhonKaen University was 74.74 ± 2.09 percentages. Carbon of food waste was 3.58 ± 0.12 percentages and Nitrogen was 0.86 ± 0.12 percentages. The C/N ratio of food waste was 3:1 to 6:1. The result present that the food waste at KhonKaen University is suitable to produce the organic fertilizers. Furthermore, the C N ratio is an acceptable level in the Thailand Fertilizer Act 2008.

Key word : Analysis of C/N,food garbage

Breeding ecology of pigeon *Columba livia* at The Office of Academic Services Building KhonKaen University.

Student : Mr. Pasan Promsuk

Project advisor : Dr. Sarun Keithmaleesatti

Department of Environmental Science, Faculty of Science, KhonKaen University, Thailand.

Rock pigeon *Columba livia* is a member of the bird Family Columbidae. The bird is a common in Thailand. Breeding ecology of the rock pigeon at the Office of Academic Services Building KhonKaen University was studied at last May to July 2011. The purposes of this study was to monitor the population of pigeon, furthermore ; hatching rate and one week survival rate were collected the data in breeding area. The results found that the *Columba livia* populations in study time were 126 – 139. Seventeen nests of pigeon and 27 eggs were found in area. Clutch size in this study was 1 – 3 eggs/nest and, the incubation time was 7 day. Hatching rate of all eggs were 59.25 percentages and one week survival survival rates were 48.15 percentages.

Key word : Breeding Ecology, *Columba livia*

Breeding ecology of Little Grebe (*Tachybaptus ruficollis*) at the wastewater treatment area, KhonKaen University

Student : Mr. KowitSomjai

Project advisor : Dr. SarunKeithmaleesatti

Department of Environmental Science, Faculty of Science, KhonKaen University, Thailand.

Little grebe *Tachybaptus ruficollis* known as the smallest of the grebe family. The bird is a native species in Thailand. In 2007, the little grebe was found in KhonKaen University waste water treatment pond. Breeding ecology of the *Tachybaptus ruficollis* was monitored on last May to August 2011 at KhonKaen University waste water treatment pond. The three objectives of this study were to study on clutch size, hatching and survival rate of the little grebe. Fourteen nests were collected the data in study time. The results found that the clutch size of *Tachybaptus ruficollis* was 3-5 egg/nest. The interval period was 12-24 hour and the incubation period was 25 day. The average width, length and weight were 25.62 cm, 35.64 cm and 12.77g, respectively. Hatching rate of all eggs were 74.07 percentage and one week survival rates were 64.81 percentage

Key word : Breeding ecology

Diversity of bird nest at KhonKaen University

Student :Mr.PratompongChuensombut

Project advisor :Dr. SarunKeithmaleesatti

Department of Environmental Science, Faculty of Science , KhonKaen University. Thailand.

Nesting habitat is an important area for bird reproduction. Diversity of bird nest at KhonKaen University. Its purpose is to study the Diversity of bird nest at KhonKaen University were studied in January to August 2011. Four areas including agricultural farm, fishery farm of Faculty of agricultural, waste water treatment pond and faculty of Science were used to observation areas. The results found that 17 species of plants species were used to build the nest. Furthermore, White popince (*Leucaena leucocephala*) was the most used to nest site of 5 species such as Ashy Woodswallow (*Artamus fuscus*), Pied Fantail (*Rhipidura javanica*), Spotted Dove (*Streptopelia chinensis*), Zebra Dove (*Geopelia striata*) and Common Myna (*Acridotheres tristis*). The nest shape in this study was found six shape including globular nest, cavity nest, platform nest, floating nest, statant Cupped nest and pensile nest. Fourteen species and ninety-eight nests were found in all study areas. Top three bird including Plain Prinia (*Prinia inornata*), Little Grebe (*Tachybaptus ruficollis*) and Eurasian Tree – Sparrow (*Passer montanus*) were found 38 nest, 15 nest and 15 nest, respectively. Three birds had nest more than other species in study areas. However, only nest of Sooty-headed Bulbul (*Pycnonotus aurigaster*) was found in this area. The result presented that Lesser Reedmace (*Typha angustifolia*) was specific nesting habitat of Plain Prinia (*Prinia inornata*).

Key word : Bird nest

Diversity of Amphibian in KhonKaen University case study on Natural pond and Artificial pond

Student : Watcharapol Pingwong

Project advisor : Dr. SarunKeithmaleesatti

**Department of Environmental science, Faculty of Science, KhonKaen University,
KhonKaen 40002, Thailand**

Diversity of amphibian in KhonKaen University on Artificial and Natural pond were studied during July – September 2009. The field survey methods in this study is Total count. The results found that three families, seven species were classified included *Bufo melanostictus* (family Bufonidae), *Rana erythraea*, *Fejervarya limnocharis*, *Hoplobatrachus regulosus*, *Occidozyga martensii* (family Ranidae), *Kaloulapulchra*, *Microhylapulchra* (family Microhylidae). The most species in this survey is *Bufo melanostictus*. Similarity Index presented 92.3% in both area. All amphibian in this study are not as protected species in the wild animals and protection act B.E. 2535.

ความหลากหลายของสัตว์สะเทินน้ำสะเทินบกในมหาวิทยาลัยขอนแก่น กรณีศึกษา แหล่งน้ำตามธรรมชาติ และแหล่งน้ำที่มนุษย์สร้างขึ้น

นักศึกษา : นายวัชรพลปิงวงศ์ รหัสนักศึกษา 493020299-0

อาจารย์ที่ปรึกษาโครงการวิจัย : ดร.ศรัณย์ เกียรติมาลีสถิต

ภาควิชาวิทยาศาสตร์สิ่งแวดล้อม คณะวิทยาศาสตร์ มหาวิทยาลัยขอนแก่น

การศึกษาความหลากหลายชนิดของสัตว์สะเทินน้ำสะเทินบกในมหาวิทยาลัยขอนแก่น บริเวณสระพลาสติกและบริเวณบึงสีฐาน ระหว่างเดือนกรกฎาคม ถึง เดือนกันยายน พ.ศ. 2552 โดยทำการสำรวจโดยวิธี Total count และเก็บตัวอย่างเดือนละ 2 ครั้ง พบสัตว์สะเทินน้ำสะเทินบกจำนวน 3 วงศ์ 7 ชนิด ประกอบด้วย วงศ์คางคก (Bufonidae) พบ 1 ชนิดคือคางคกบ้าน (*Bufo melanostictus*) วงศ์กบเขียว (Ranidae) พบ 4 ชนิด คือ กบบัว (*Rana erythraea*) กบหนอง (*Fejervarya limnocharis*) กบนา (*Hoplobatrachus regulosus*) และเขียวทราย (*Occidozygamartensii*) วงศ์อึ่งอ่าง (Microhylidae) พบ 2 ชนิดคือ อึ่งอ่างบ้าน (*Kaloulapulchra*) อึ่งอ่างดำ (*Microhylapulchra*) ซึ่งชนิดที่พบมากที่สุดในการสำรวจครั้งนี้คือ คางคกบ้าน (*Bufo melanostictus*) และจำนวนชนิดที่พบในทั้งสองพื้นที่มีค่าดัชนีความเหมือน (Similarity index) คิดเป็น 92.3 % และไม่พบว่ามีชนิดใดที่มีสถานภาพเป็นสัตว์ป่าคุ้มครองตาม พระราชบัญญัติสงวนและคุ้มครองสัตว์ป่า พ.ศ. 2535

Diversity of Amphibian in KhonKaen University case study on Natural pond and Artificial pond .

Student : Mr. Watcharapol Pingwong

Project advisor : Dr. SarunKeithmaleesatti

Department of Environmental Science, Faculty of Science , KhonKaen University. Thailand.

Diversity of amphibian in KhonKaen University on Artificial and Natural pond were studied during July – September 2009. The field survey methods in this study is Total count. The results found that three families, seven species were classified included *Bufo melanostictus* (family Bufonidae), *Rana erythraea*, *Fejervarya limnocharis*, *Hoplobatrachus regulosus*, *Occidozygamartensii* (family Ranidae), *Kaloulapulchra*, *Microhylapulchra* (family Microhylidae). The most species in this survey is *Bufo melanostictus*. Similarity Index presented 92.3% in both area. All amphibian in this study are not as protected species in the wild animals and protection act B.E. 2535.

Key word : Amphibian, Natural pond and Artificial pond .

Diversity of bird nest at KhonKaen University.

Student :Mr.PratompongChuensombut

Project advisor :Dr. SarunKeithmaleesatti

Department of Environmental Science, Faculty of Science , KhonKaen University. Thailand.

Nesting habitat is an important area for bird reproduction. Diversity of bird nest at KhonKaen University. Its purpose is to study the Diversity of bird nest at KhonKaen University were studied in January to August 2011. Four area including agricultural farm, fishery farm of Faculty of agricultural, waste water treatment pond and faculty of Science were used to observation areas. The results found that 1 species of plants species were used to build the nest. Furthermore, White popince(*Leucaenaleucocephala*) was the most used to nest site of 5 species such as Ashy Woodswallow(*Artamusfuscus*), Pied Fantail (*Rhipidurajavanica*), Spotted Dove (*Streptopeliachinensis*), Zebra Dove (*Geopeliastrata*) and Common Myna (*Acridotherestrictis*). The nest shape in this study was found six shape including tiobular nest, cavity nest, platform nest, floating nest, statant Cupped nest and pensile nest. Fourteenspecies and ninety-eight nests were found in all study areas. Top three bird including Plain Prinia(*Prinia*Little Grebe (*Tachybaptusruficollis*) and Eurasian Tree — Sparrow (*Passer montanus*) were found 38 nest. 15 nest and 15 nest, respectively. Three birds had nest more than other species in study area However. only nest of Sooty-headed Bulbul (*Pycnonotusaurigaster*) was found in this area. The result that Lesser Reedmace(*Typhaangustifolia*) was specific nesting habitat of Plain (*Priniatrnircalactraata*).

Key word : Diversity of bird

Effect of Atrazine on development of Rugose frog (*Microhyla ornata*) tadpole.

Student : Miss Kamonthip Khunsungnoen

Project advisor : Dr. Sarun Keithmaleesatti

Department of Environmental Science, Faculty of Science, KhonKaen University, Thailand.

Effect of herbicides on development of Rugose frog were studied in (*Microhyla ornata*). The rugose frog tadpoles were collected at pond area on the Sa-plastic, Khonkan University. The four different concentrations including 0 mg/L, 1 mg/L, 5 mg/L and 10 mg/L were studied in this laboratory. The tadpoles of rugose frog were studied for 5 weeks. In this study, 30 tadpoles per treatment were average weight and survival rate monitored including on 5 weeks. The result found that the survival rate of tadpoles at 1 mg/L were higher than control, 5 mg/L and 10 mg/L respectively. However, the average weight and survival rate of rugose frog tadpoles were not significantly different. ($p > 0.05$)

Key word : Rugose frog

**Mortality of vertebrates on a rural road at KhonKaenuniversity, Mueang district,
KhonKaen province Thailand.**

Student :Mr.Phumiphatsudsuk

Project advisor :Dr. SarunKeithmaleesatti

Department of Environmental Science, Faculty of Science , KhonKaen University. Thailand.

Roadkill is an important to wildlife population decline especially amphibian and reptiles. This survey was study diversity of animal mortality on road at rural road between Adunyaram temples (Wat Pa Adunyaram) to Mariwan road at Mueang district, KhonKaen province Thailand. This road in study area was 2.7 km of length. Field surveys were started on 5 July 2010 — 27 September 2010. The results found the total number of vertebrates dead on the road were 234 organisms. The vertebrates which died on

road were classified to 4 class, 7 order, 15 family and 16 species. The results presented that 11 mammals, 63 birds, 14 reptiles and 146 amphibians were died by road kill. *Bufo melanostictus*, *Passer montanus* and *Kaloulapulchra* were top three vertebrates on which it died on the road. Eight species of vertebrate including *Oligodontaeniata*, *Xenopeltis unicolor*, *Enhydryslumbea*, *Dendrelaphispictus*, *Calotes versicolor*, *Bufo melanostictus* and *Kaloulapulchra* were classified to Least concern (LC) by Thailand red data 2005.

Key word : Mortality of vertebrates,rural road

Pesticide Usage in agricultural area at SilasubdistrictMuengdistrict KhonKaen Province.

Student : Miss ThatsaneeChaihan

Project advisor : Dr. SarunKeithmaleesatti

Department of Environmental Science, Faculty of Science , KhonKaen University. Thailand.

Pesticide usage in agricultural area at SilasubdistrictMueng district KhonKaen province were studied July to August 2011, the aim of this study was type of pesticide which used in this area and reasoned to usage the chemical pesticides. Three hundreds and eighty seven farmers were collected the information. The results found that rice was the most popular plant in Silasubdistrict and 94.3 percentages was used in areas. The most of farmers are using pesticide 92.8 percentages. Golden apple snail (*Pomaceacanaliculata*) is the famous pest which found in the rice field. Moreover, Golden apple snail was killed by chemical about 63.9 percentages. Abamectin which is an insecticide as well as an acaricide and a nematicide was applied to destroy the golden apple snail 32.3 percentages. Fifty seven point one percentages bought the chemical at local shop. The statistical analysis presented that the correlation between income and chemical usage was significantly different ($p < 0.05$). Additionally, the size of agricultural area and chemical usage showed the significantly different ($p < 0.05$).

Key word : Pesticide

Potential and Development of Tourism Market InKhaoYai National Park by Weighting Score Method and Rating Scale Method.

Student :Miss BoossabongpanNamtong

Project advisor : Dr. SarunKeithmaleesatti

Department of Environmental Science, Faculty of Science , KhonKaen University. Thailand.

The primary objective of this study is to assess the potential and development of tourism market at KhaoYai National Park, using Weighting Score Method and Rating Scale Method. From July to September 2004, 400 questionnaires were distributed to tourists, using a convenient sampling technique, at KhaoYai National Park. The weighting score Method indicates that the potential of KhaoYai National Park as a tourist place falls in the high – potential level , with (the score obtained is 2.5 on scale of 3.0). Furthermore, the opportunity for market development falls in the moderate level according to the Rating Scale Analysis (the score is 3.0 on scale of 5.0). Approximately 13.5 % of the respondents expect no market development and 19% are not sure if market development is a good idea. These groups of respondents explained that market development could result in environmental disturbances. On the other hand, 67.5% understand that market development is highly possible due to the great diversity of tourist attraction at KhaoYai National Park. In addition, the majority of respondents 97% reported that they would come back to KhaoYai National Park again. Natural richness and aestheticism of the Park are key factors that attract a large numbers of tourists to KhaoYai every year.

Key word : Tourism

Potential of Bird Watching Source Standard assessment in Nam Nao National Park, Phetchabun Province.

Student : Miss PannapatChongko

Project advisor : Dr. Saran Keithmaleesatti

Department of Environmental Science, Faculty of Science , KhonKaen University. Thailand.

Bird watching is an important activity to indicates the potential of ecotourism. The assessment of bird watching ability at Nam Nao national park, Phetchabun Province is determined by using the bird watching source standard of Office of Tourism Development (OTD). Five components are used in the evaluations which are natural components, facilities, the management and administration, information and public participation. The study was conducted from August to September 2009 by using the total counts survey method. Results of the study reveal that twenty-nine families, sixty-five species of bird were found in the study area. Moreover, five species were classified as an important conservation species. The standard of potential of bird watching source at Nam Nao national park, Phetchabun Province was classified in level two from five levels.

Keywords: Bird watching standard, Bird watching, Nam Nao national park, Ecotourism

Quality Analysis of Surface Water Nong La LerngKeng Lake.

Student :Miss KanjanaAchuayram

Project advisor : Dr. SarunKeithmaleesatti

Department of Environmental Science, Faculty of Science , KhonKaen University. Thailand.

Quality Analysis of Surface Water at Nong La LerngKeng, Thombon Dong KengAmpherNongSonk Hong, KhonKaen was studied. Parameters studied were Oxygen Demand (DO), pH, Temperature ($^{\circ}\text{C}$), Biochemical Oxygen Demand (BOD), Total Coliform Bacteria and Fecal Coliform Bacteria. Water samples were collected from Nong La LerngKeng during July- September 2004. The results were as follows: pH ranged between 6.69-7.14, Oxygen Demand (DO) ranged between 5.95-6.16 mg/l, Temperature ($^{\circ}\text{C}$) ranged between 28.03-29.33 $^{\circ}\text{C}$, Biochemical Oxygen Demand (BOD) ranged between 2.36-3.12 mg/l, Total Coliform Bacteria ranged between 228-783 MPN/100 ml and Fecal Coliform Bacteria ranged between 20-223 MPN/100 ml. Biochemical Oxygen Demand (BOD) is parameter wasn't within the standard criteria of quality surface water kind of the second and third.

Key word : Surface Water, Quality Analysis

Key word :

Species diversity of Wildlife trade at UdonThani Province.

Student :Miss NattayaKaewnana

Project advisor : Dr.SarunKeithmaleesatti

Department of Environmental Science, Faculty of Science , KhonKaen University. Thailand.

Wildlife in Thailand is protected by the wild animal reservation and protection act B.E. 2535 however; Illegal wildlife trade had been found at local market, Species Diversity of Wildlife Trade in Phen district, Bandung district and Muang district, UdonThani Province were studied in July to September 2009. Field Survey method was used to collect the data in area. Twenty species of wildlife in the market were identified and classified to four group including one species of mammals, fifteen species of birds, one species of reptiles, three species of amphibians. Furthermore, seven species is alien wildlife. Wildlife in this market are classified as two vulnerable species from IUCN Red Data (2009). and used three type of benefit including pet, food and merits.

Key word : Wildlife trade

Species Diversity of Wildlife Trade between the Thai-Cambodia Border at Chong Sa-Ngam, Phu Sing District, Si SaKet Province

Student :Miss PattariyaThonglue Identification number493020293-2

Project advisor :Dr. SarunKeithmaleesatti

Department of Environmental Science Faculty of Science, KhonKaen University

Illegal wildlife trade is a terrible threat to wildlife species. Southeast Asia is a major hub for global wildlife trade especially Thailand border. The objectives of this study were as follows: to survey species diversity of Wildlife Trade between the Thai-Cambodia Border at Chong Sa-Ngam, Phu Sing District, Si SaKet Province were studied in July to September 2009. Field survey method was used to collect the data in area. Seventeen families, nineteen species were identified and found in this market. The wildlife were classified to four group including eight families of mammals, four families of birds, three families of reptiles and two of amphibians. *Manis javanica* and *Elephas maximus* are classified as endangered species from IUCN Red List (2009). Furthermore, *Capricornis sumatraensis* is evaluated a reservation species in the wild animals reservation and protection act. B.E.2535. Wildlife's in this market are used six type of benefit including pet, food, collectibles, furniture, medicine and merits.

ความหลากหลายของสัตว์ป่าที่มีการซื้อขายระหว่างชายแดนไทย-กัมพูชา ที่ช่องสง่าอำเภอภูสิงห์
จังหวัดศรีสะเกษ

นักศึกษา :นางสาวภัทริยา ทองลือ รหัสนักศึกษา 493020293-2

อาจารย์ที่ปรึกษาโครงการวิจัย : ดร.ศรัณย์ เกียรติมาลีสถิต

ภาควิชาวิทยาศาสตร์สิ่งแวดล้อม คณะวิทยาศาสตร์ มหาวิทยาลัยขอนแก่น

การค้าสัตว์ป่าที่ผิดกฎหมายเป็นภัยคุกคามร้ายแรงต่อสัตว์ป่า เอเชียตะวันออกเฉียงใต้เป็นศูนย์กลางการค้าสัตว์ป่าที่สำคัญของโลก โดยเฉพาะบริเวณชายแดนไทย ซึ่งการศึกษาครั้งนี้มีวัตถุประสงค์เพื่อศึกษาสำรวจความหลากหลายของสัตว์ป่าที่มีการซื้อขายระหว่างชายแดนไทย-กัมพูชา ที่ช่องสง่า อำเภอภูสิงห์ จังหวัดศรีสะเกษทำการศึกษาในเดือนกรกฎาคม ถึง กันยายน 2552 โดยใช้วิธีการสำรวจเก็บข้อมูลในพื้นที่ตลาดแห่งนี้ พบว่า มีสัตว์ป่าที่มีการซื้อขาย จำนวน 17 วงศ์ 19 ชนิด โดยจำแนกสัตว์ป่าออกเป็น 4 กลุ่ม เป็นสัตว์เลี้ยงลูกด้วยนม (Mammals) 8 วงศ์ นก (Birds) 4 วงศ์ สัตว์เลื้อยคลาน (Reptiles) 3 วงศ์และสัตว์สะเทินน้ำสะเทินบก (Amphibians) 2 วงศ์ ในที่นี้เป็นสัตว์ที่อยู่ในสถานภาพใกล้สูญพันธุ์ ตามทะเบียน IUCN Red List (2009) 2 ชนิด คือ ลิ่นชวา (*Manis javanica*) และช้างเอเชีย (*Elephas maximus*) เป็นสัตว์ป่าสงวน ตาม พ.ร.บ.สงวนและคุ้มครองสัตว์ป่า พ.ศ.2535 คือ เลียงผา (*Capricornis sumatraensis*) สัตว์ป่าทั้งหมดนี้ถูกนำมาใช้ประโยชน์ 6 ประเภท คือ เป็นสัตว์เลี้ยง อาหาร ของสะสม เครื่องประดับตกแต่งบ้าน ใช้เป็นยาแผนโบราณและปล่อยทำบุญ

Studies of the Potential of Namnao National Park as Tourist Attraction place by Standard Potential Index Method.

Student : Miss PoraneeKiattisin

Project advisor : Dr. SarunKeithmaleesatti

Department of Environmental Science, Faculty of Science , KhonKaen University. Thailand.

The study of Namnao National Park as potential tourist attraction by measuring standard quality indices. The indices were physical of attraction place, environment, economic-social and value of education. This would involve gathering of basic information with regard to touring sites and conducting field surveys to identify the potentiality of this touring sites.

Various opinions acquired through 404 sets of questionnaire; by distribution as followed: 289 sets given to tourists, 35 sets given to National Park Officials and 80 sets to local population. Results for survey were showed Namnao National Park to be of the excellent degree of satisfaction, by relying the decision on the standard quality of ranking for tourist spots at 83.81%.

This could be concluded that local population should be promoted to participate and get themselves involve closely with the National Park Officials. Lastly this survey showed that there should be a period of rehabilitation of forest back to a balanced ecology system suitable for eco-tourism.

Key word : Tourist Attraction

Study The Relationship Between Birds And Habitat Types At Nong La-Lerng-

Keng,KhonKaen , Province

Student : Mr. NitiSukumal

Project advisor :Dr. SarunKeithmaleesatti

Department of Environmental Science, Faculty of Science , KhonKaen University. Thailand.

The Relationship between birds and habitat types at Nong La-Lerng-Keng ,KhonKaen Province was studied by point station. The studies were conducted between June 2004 and September 2004.

56 species of bird were found in study area. The aquatic birds and March birds were 20 species (35.71%). The habitat types were found 5 types such as floating weed zone, open water zone, emergent weed zone, island zone, mixed habitat zone. The 36 species were used island zone. The aquatic birds and march birds in the floating weed zone were found 14 species whereas the birds in open water zone were found only 4 species. The abundant birds were 8 species and the rare birds where 9 species.

Key word : Habitat

The Impact of common myna Acridotherestrictis and white-vented myna Acridotheresgrandis community on Human at sichan Road, KhonKaen municipality Mueang District KhonKaen Province.

Student :Mr. SermsakKoosakunrat

Project advisor :Dr. SarunKeithmaleesatti

Department of Environmental Science, Faculty of Science , KhonKaen University. Thailand.

Common myna Acridotherestrictis and white-vented myna Acridotheresgrandis are member of family Sturnidae. Both mynas are the native birds of Northeastern Thailand. The myna has adapted very well to urban environments. The impact of both myna community on human at Sichan Road between The City Pillar Shrine to The Bank of Thailand KhonKaen branches, KhonKaen municipality, Mueang district, KhonKaen Province were determined on January to July 2011. The results found that Sichan Road between the City Pillar Shrine to The Bank of Thailand KhonKaen branches was an important myna community on KhonKaenmuniciparity. Additionally, this area was usage to nesting habitat of both spicies. The populations of both mynas in this area at dry season were higher than wet season ($p < 0.05$). The hight impacts of both mynas on human community in study area were noise and excrete waste.

Key word : *Acridotherestrictis,Acridotheresgrandis*