**PROGRAM HIBAH KOMPETISI A2 (PHK-A2),**
**PROGRAM STUDI PENDIDIKAN BIOLOGI,**
**FAKULTAS KEGURUAN DAN ILMU PENDIDIKAN**
**UNIVERSITAS BENGKULU**

# *SERTIFIKAT*

*Diberikan kepada:*

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**Atas pertisipasinya dalam "WOKSHOP BAGI DOSEN DAN MAHASISWA TENTANG PEMELIHARAAN HERPETOFAUNA LANGKA (Monouria emys dan Heosemys spinosa) SEBAGAI SUMBER BELAJAR KONSERVASI EX SITU", pada tanggal 1 Desember 2008 di FKIP Universitas Bengkulu, sebagai pemakalah berjudul:**

**PEMELIHARAAN Monouria emys DAN Heosemys spinosa SEBAGAI SUMBER BELAJAR KONSERVASI EX SITU DI KEBUN BIOLOGI, UNIVERSITAS BENGKULU**

**Mengetahui**
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# PEMELIHARAAN HERPETOFAUNA LANGKA (Monouria emys dan Heosemys spinosa) SEBAGAI SUMBER BELAJAR KONSERVASI EX SITU DI KEBUN BIOLOGI, UNIVERSITAS BENGKULU

Oleh

Aceng Ruyani

PENGEMBANGAN PROGRAM A2,
PROGRAM STUDI PENDIDIKAN BIOLOGI,
UNIVERSITAS BENGKULU BENGKULU

Bengkulu, 1 Desember 2008

# PEMELIHARAAN HERPETOPAUNA LANGKA (Monouria emys dan Heosemys spinosa) SEBAGAI SUMBER BELAJAR KONSERVASI EX SITU DI KEBUN BIOLOGI, UNIVERSITAS BENGKULU

**A. Latar Belakang**

Monouria emys

[Endangered (EN) on the IUCN Red List 2006]

Heosemys spinosa

[Endangered (EN) on the IUCN Red List 2006]

**B. Tujuan**

Kegiatan ini bertujuan:

(1) Menyediakan *first hand experience* bagi mahasiswa calon guru dalam mempelajari materi konservasi kura-kura secara ex situ.

(2) Merintis *captive breeding* bagi *M. emys* dan *H.spinosa* di dalam kampus Universitas Bengkulu.

(3) Menyediakan tempat berkunjung yang menarik bagi siswa SD, SMP, dan SMA terutama dari sekitar Kota Bengkulu untuk mempelajari model upaya konservasi kura-kura.

**C. Mekanisme program (berkelanjutan)**

(1) Menanam tumbuhan yang dapat menjadi pakan *M. emys* dan *H.spinosa*.

(2) Menata ulang instalasi pemeliharan bagi *M. emys* dan *H.spinosa*.

(3) Mengumpulkan dan memelihara sejumlah spesimen hidup *M. emys* dan *H.spinosa* di Kebun Biologi, UNIB.

(4) Menggunakan koleksi *M. emys* dan *H.spinosa* di Kebun Biologi, UNIB sebagai sumber belajar untuk upaya konservasi kura-kura.

Berapa tumbuhan seperti C. esculentum, C. papaya, and A. heterophylla dapat dijadikan sumber pakan bagi *M. emys* dan *H.spinosa*

Instalasi pemeliharaan bagi *M. emys*

Instalasi pemeliharaan bagi *H.spinosa*

**C. Hasil yang telah tercapai (Desember 2008)**

(1). Tersedia instalasi dasar untuk pemeliharaan *M. emys* dan *H.spinosa*.

(2). Terkumpul empat ekor *M. emys* dan tiga ekor *H.spinosa*.

(3). Berhasil tumbuh subur *C. esculentum* dan *C. papaya* di sekitar Kebun Biologi.

(4). Koleksi *M. emys* pernah menjadi bahan penelitian seorang mahasiswa Prodi Pendidikan Biologi dan sumber belajar bagi siswa

(5). Koleksi *H.spinosa* pernah menjadi sumber belajar bagi siswa

**D. Kegiatan yang akan dilaksanakan**

(1). Menambah jumlah koleksi hidup *M. emys* dan *H.spinosa*.

(2). Manambah jenis tumbuhan yang dapat menjadi sumber pakan *M. emys* dan *H.spinosa*.

(3). Merancang penelitian tentang prilaku seksual *M. emys* dan *H.spinosa*.

(4). Sosialisasi program kepada mahasiswa, dosen, pimpinan univeristas, sekolah, dan masyarakat.

(5). Menjalin kerja sama dengan perorangan dari lembaga swadaya masyarakat domestik maupun asing tentang teknis *captive breeding* bagi *M. emys* dan *H.spinosa*.

**E. Harapan**

Pimpinan fakultas dan universitas diharapkan dapat memberikan sebagian kecil perhatian dan sumberdayanya untuk keberhasil konservasi *ex situ* kura-kura.

Siap bekerja sama dengan Anda untuk keberhasilan program:

"PEMELIHARAAN HERPETOPAUNA LANGKA (Monouria emys dan Heosemys spinosa) SEBAGAI SUMBER BELAJAR KONSERVASI EX SITU DI KEBUN BIOLOGI, UNIVERSITAS BENGKULU"

TERIMA KASIH !

# *Heosemyspinosa* AND *Monouria emys* LIVE COLLECTION AS LEARNING RESOURCE FOR *EX SITU* CONSERVATION AT THE BIOLOGICAL GARDEN OF BENGKULU UNIVERSITY

***Heosemy spinosa*** ***Monouria emys***

[Endangered (EN) on the IUCN Red List 2006]

*by*
Dr. **Aceng Ruyani**

**WORKSHOP BAGI DOSEN DAN MAHASISWA TENTANG PEMELIHARAAN HERFETOFAUNA LANGKA SEBAGAI SUMBER BELAJAR KONSERVASI EX SITU**

**PROGRAM HIBAH KOMPETISI A2 (PHK-A2)**
**JURUSAN PENDIDIKAN MATEMATIKA DAN ILMU PENGETAHUAN ALAM**
**FAKULTAS KEGURUAN DAN ILMU PENDIDIKAN**
**UNIVERSITAS BENGKULU**
**2008**

***Heosemyspinosa* AND *Monouria emys***

# *LIVE COLLECTION AS LEARNING RESOURCE FOR EX SITU* CONSERVATION AT THE BIOLOGICAL GARDEN OF BENGKULU UNIVERSITY

*M. emys*

## 1. Summary

*H. spinosa* and *M. emys* populations in Bengkulu province, Indonesia, were sparse and fragmented into some small areas caused by monoculture plantation and transmigration program. Meanwhile our culture and policy of local government, in Bengkulu especially, have no enough support for turtle conservation action, therefore next years *H. spinosa* and *M. emys* status are possible to change from Endangered (EN) to Critically Endangered (CR). Based on the facts, captive care of *H. spinosa* and *M. emys* at Bengkulu University (UNIB) as learning resource for *ex situ* turtle conservation is absolutely necessary to realize. The project includes: (a) to complete an out doot basic installation of care and breed area at the Biological Garden (BG) of UNIB, (b) to plant some species which could be used as the food of *H. spinosa,* and *M. emys* (c) to collect several *H. spinosa,* and *M. emys* from a district or sub district in Bengkulu province, (d) to care and manage several live collections of *H. spinosa* and *M. emys* at the BG of UNIB, and (e) to use the collections of *H. spinosa* and *M. emys* as learning resource for *ex situ* conservation. The project is multiyear activities, meanwhile within duration of 12 months hopefully it could be; (1) first hand experience for undergraduate students in learning the matter of *ex situ* turtle conservation, (2) initiating captive breeding of *H. spinosa* and *M. emys* at UNIB, (3) target of visiting for elementary, intermediate, and high school students in studying a model of conservation effort.

## 2. Background and conservation rationale

*H. spinosa* and *M. emys* are threatened by over harvesting and exploitation for the food or pet trade, compounded by habitat destruction. Some information revealed that *H. spinosa* and *M. emys* populations in Bengkulu province, Indonesia, are sparse and fragmented into some small areas caused by monoculture plantation and transmigration program. Despite the fact that majority people in Bengkulu did not use turtle for the food, because of its high market value makes some of them were interesting intensively to hunt and collect the reptile. *H. spinosa* and *M. emys* are relatively easy target for hunters and collectors, furthermore it should be noticed that their gained target never release back to the wild. Recently *H. spinosa* is rare species in Bengkulu and the animal is also classified as Endangered (EN) on the IUCN Red List 2006. Meanwhile our culture and policy of local government, in Bengkulu especially, have no enough support for turtle conservation action, therefore next years *H. spinosa* and *M. emys* status are possible to change from EN to Critically Endangered (CR).

*Most reports concerning successful breeding and intensive study of the turtle came far* from outside of Bengkulu. Asian Spiny Turtle first bred in captivity at Atlanta Zoo (Herman, 1993). Reality revealed that in Bengkulu up till now there is not any personal or institution that could work continuously for *H. spinosa* conservation. Our image about turtle conservation is uneconomic activity, and the image could only be corrected by an excellent planning of education program. It is wide-accepted that turtle conservation program should not only to intend on biological aspects, but it must also be anticipated by intensive socialization, promotion, and education. The turtle education program can be supplemented in succession into the remain effective curriculum on elementary, intermediate, and high school which in implementation using general principals of teaching-learning processes such as fist hand experience in natural science education. In this context, Department of Biological Education, UNIB, of course, has a responsibility to prepare an excellent learning resource for undergraduate students concerning the matter of turtle conservation in side of the campus

As motioned above indicated that captive care of *H. spinosa* and *M. emys* at UNIB as learning resource for *ex situ* turtle conservation is absolutely necessary to realize. After completing the project hopefully it could be; (a) first hand experience for undergraduate

*students in learning the matter of ex situ turtle conservation, (b) initiating captive breeding of H. spinosa* and *M. emys* at UNIB, (c) target of visiting for elementary, intermediate, and high school students from around of Bengkulu City especially in studying a model of conservation effort. Furthermore, out come of the project is to improve capacity building of the Bengkulu local government to participate in turtle conservation program.

**3. Specific methodology**

In general the project is multiyear activities, meanwhile within a period of one year (12 months) will be carried out in six successive steps:

*a. To complete the out door basic installation of care and breed area at the BG of UNIB*

We would like to state here that Department of Biological Education, UNIB, received the PHK (Program Hibah Kompetisi) A-2 grant from RI government for developing Biological Garden (BG) within the period of three years (2006-2008). The grant is aimed to improve the quality of undergraduate student research using live biological material collections in side of the campus. Furthermore the BG is planed as the area for teaching-learning resource and laboratory of conservationists including to initiate *ex situ* turtle conservation action.

Fig 1. Undergraduate students used some collections at the BG of UNIB as source of learning (left). Location of the out door basic installation of breeding area supported by the PHK A-2 project which will be completed to care and manage several live collections of *H. spinosa* (right).

*b. To plant some species that could be used as the food of H. spinosa* and *M. emys.*

According to our experience during two years to care several *H. spinosa* at a personal area and some reports indicated that the spine turtle is herbivorous (Herman, 1993; Gurley, 2003). Some species such as *Musa paradisiaca*, *Phaseolus vulgaris*, *Colocasia esculentum*, and *Carica papaya* could be used as the food of the animal. These species will be planted at near around of the BG.

*c. To collect H. spinosa from some districts in Bengkulu province.*

Local hunters, local traders, and middleman whom were participating on the turtle's distribution process in Bengkulu province will be viewed as partnerships to collect a limited number of *H. spinosa*. The first priority of spiny turtle collection is the reptile which carapace lengths are between 82 and 102 mm, and then the sex ratio is one male and two females (Herman, 1993).

*d. To care and manage several live collections of H. spinosa at the BG of UNIB.*

The gained live collections of *H. spinosa* and *M. emys* will be cared and managed at the BG of UNIB in accordance with some published recommendations (Herman, 1993; Gurley, 2003). Furthermore share competency and technical assistance with some overseas institutions (such as Zoo Atlanta, the Vietnam-based Asian Turtle Program, and Cuc

*Phuong National Park) are really necessary in developing the similar activity. Therefore, we* would like to make both direct and indirect correspondence (see an acceptance letter from Douglas Hendrie, Vietnam), and then if it is possible to generate a memorandum of understanding (MOU) with the overseas institutions.

*e. To use live collections of H. spinosa* and *M. emys at the BG of UNIB as learning resource for ex situ turtle conservation.*

The second goal as mentioned on the d step is to use several live collections of *H. spinosa* at the BG of UNIB as learning resource for *ex situ* turtle conservation. It is wide-accepted that turtle conservation program should not only to intend on biological aspects, but it must also be anticipated by intensive socialization, promotion, and education. The turtle education program can be supplemented in succession into the remain effective curriculum on elementary, intermediate, and high school which in implementation using general principals of teaching-learning processes such as first hand experience in natural science education.

The live collections of *H. spinosa* and *M. emys* will be used in both theory and practice of taxonomy, physiology, etiology, development, and genetics lectures at Department of Biological Education, UNIB. Up till now (June 2008) ten undergraduate students of the department studied more both biological and educational aspects of turtle as subject matter of their thesis (see list of undergraduate thesis).

**4. Project deliverables anticipated**

As stated previously that the project is non-commercial multiyear activities which are required sustainable supports from both relevant local and international institutions. PHK A-2 funding will be used to complete the basic installation of breeding area at the BG of UNIB, meanwhile financial support for the next five steps are requested from The TSA. Furthermore the project should be anticipated by some supports from the team leaders of UNIB and the local government of Bengkulu province.

**5. General timetable**

The project is multiyear activities, meanwhile within a period of one year (12 months) will be carried out in six successive steps. The schedule can be obtained below:

| No | Activity | Month | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1 | To complete the basic installation of breeding area at the BG of UNIB | √ | √ | | | | | | | | | | |
| 2 | To plant some which could be used as food of *H. spinosa* and *M. emys* | | √ | √ | √ | √ | √ | √ | | | | | |
| 3 | To collect several live specimens of *H. spinosa* and *M. emys* om districts in Bengkulu province. | | | | | | √ | √ | √ | √ | | | |
| 4 | To care and manage several live collections of *H. spinosa* and *M. emys* at the BG of UNIB (multiyear; to be continue). | | | | | | √ | √ | √ | √ | √ | √ | √ |
| 5 | To use several live collections of *H. spinosa* and *M. emys* at the BG of UNIB as learning resource for *ex situ* turtle conservation (multiyear; to be continue). | | | | | | | √ | √ | √ | √ | √ | √ |
| 6 | Report | | | | | | | | | | | √ | √ |

### *6. Literature cited*

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# ALBUM FOTO

**WORKSHOP BAGI DOSEN DAN MAHASISWA TENTANG PEMELIHARAAN HERFETOFAUNA LANGKA SEBAGAI SUMBER BELAJAR KONSERVASI EX SITU**

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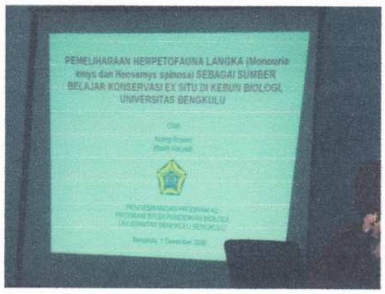
SELAMAT DATANG
WOKSHOP BAGI DOSEN DAN MAHASISWA TENTANG
PEMELIHARAAN HERPETOFAUNA LANGKA (Manouria
emys dan Heosemys spinosa) SEBAGAI SUMBER
BELAJAR KONSERVASI EX SITU







LAJU PERTUMBUHAN KURA GARIS HITAM
(Cyclemys oldhamii) DAN KURA BATOK (Cuora amboinensis) SELAMA DELAPAN PEKAN DALAM BAK PEMELIHARAAN DI KEBUN BIOLOGI, UNIVERSITAS BENGKULU
Prodi Pendidikan Biologi,
Universitas Bengkulu,


PEMELIHARAAN HERPETOFAUNA LANGKA (Monocrio emys dan Heosemys spinosa) SEBAGAI SUMBER BELAJAR KONSERVASI EX SITU DI KEBUN BIOLOGI, UNIVERSITAS BENGKULU