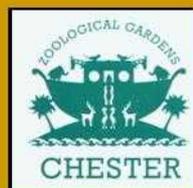




# *Orangutan Conservancy 2010 Veterinary Workshop*



Photos provided by Raffaella Commitante and Steve Unwin

Orangutan Conservancy 2010 Veterinary Workshop logo courtesy Amy Burgess

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Prepared by participants in the Orangutan Conservancy 2010 Veterinary Workshop, Deli Serdang, Northern Sumatra, Indonesia, 2nd -6th August 2010

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*Orangutan Conservancy 2010 Veterinary Workshop Report.*

Additional copies of the *Orangutan Conservancy 2010 Veterinary Workshop Report* can be ordered through the Orangutan Conservancy, P.O. Box 513, 5001 Wilshire Blvd., #112, Los Angeles, California, 90036, USA. [www.orangutan.com](http://www.orangutan.com).



## **Orangutan Conservancy 2010 Veterinary Workshop**

**August 2- 6 2010**

**The Hill Hotel & Resort, Sibolangit, Deli Serdang, Northern Sumatra, Indonesia**

### **Participating Organizations:**

Orangutan Conservancy, United States  
Chester Zoo / NEZS, United Kingdom  
Liverpool School of Tropical Medicine, United Kingdom  
Murdoch University, Perth, Western Australia  
Sumatran Orangutan Conservation Programme (SOCP), Medan, Indonesia  
Borneo Orangutan Survival Foundation, Nyaru Menteng, Palangkaraya, Kalimantan, Indonesia  
Borneo Orangutan Survival Foundation, Samboja Lestari, Samboja, Kalimantan, Indonesia  
Orangutan Foundation International (OFI), Kalimantan, Indonesia  
Orangutan Foundation United Kingdom (OFUK), Kalimantan, Indonesia  
Syah Kuala University, Aceh, Sumatra, Indonesia  
Gadjah Mada University, Jogjakarta, Indonesia  
International Wildlife Rescue, Indonesia (GPOCP)  
BOS Switzerland, Switzerland  
ABAXIS Europe, Germany  
Bogor Agricultural University/Primate Center for Wildlife Studies (IPB/PSSP) Java, Indonesia  
Putra University, Kuala Lumpur, Malaysia  
Frankfurt Zoological Society/Jambi SOCP Orangutan Release Site, Sumatra, Indonesia  
Veterinary Society for Sumatran Wildlife Conservation, Sumatra, Indonesia  
VESSWIC

### **Supporting Organizations:**

Orangutan Conservancy, United States  
Chester Zoo/ NEZS, United Kingdom  
American Association of Zoo Keepers (Birmingham, AL), United States  
ABAXIS Europe, Germany

Cleveland Metroparks Zoo / Cleveland Zoological Society, United States

Murdoch University, Australia

Chembio Diagnostics, Inc., United States

Liverpool School of Tropical Medicine, United Kingdom

**Hosted by:**

**Sumatran Orangutan Conservation Programme(SOCP)/ Yayasan Ekosystem Lestari (YEL)**



## Orangutan Conservancy 2010 Veterinary Workshop

### 2010 Workshop Report

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## Orangutan Conservancy 2010 Veterinary Workshop

### Workshop Report

August 2 -6, 2010



### Section 1

## Executive Summary

Collectively, they care for the largest captive population of orangutans in the world. Yet the handful of veterinarians and healthcare staff who work at orangutan rehabilitation centers across Sumatra and Borneo face nearly impossible odds, and often find themselves short of medicine, equipment, money, space, support staff and time.

But those same dedicated men and women do not lack for skill. Or commitment. And that is why the Orangutan Conservancy was proud to be able to stage the Orangutan Conservancy (OC) 2010 Veterinary Workshop, which was held August 2-6 in Medan, Sumatra. The workshop series, which was inaugurated in 2009 in Borneo, gathered together the veterinary teams that work at the frontlines of the orangutan conservation crisis, and gave them a rare opportunity to hone skills, discuss issues and ideas, and renew friendships that could some day mean the difference between life and death for endangered apes.

Orangutans are in severe crisis. The largest of the great apes found in Asia, their natural range is limited to the islands of Borneo and Sumatra, and their rainforest homes are disappearing quickly. More than 80 percent of the orangutans' habitat has been destroyed over the last 20 years, and no more than 63,000 orangutans are thought to exist. At the current rate of decline, experts believe that orangutans may become extinct in the wild within 25 years.

The primary threats to orangutans are illegal logging and habitat destruction, human encroachment, the conversion of rainforests to oil palm plantations, and the pet trade. As a result of such intense pressures, an extremely large number of orphaned orangutans exist in rehabilitation centers across Borneo and Sumatra. These orangutans – which number approximately 1,600 – arrive bearing a host of physical and emotional wounds, and require intense veterinary care to recover.

The orangutans that are judged fit to return to the wild are reintroduced through a long, complex process, but the overwhelming majority continue to reside in the rehabilitation centers.

The OC 2010 Veterinary Workshop focused on all aspects of captive orangutan care, with a special emphasis on the detection and treatment of tuberculosis (TB). A joint program between OC and Chembio Diagnostics Systems Inc. provided large caches of PrimaTB STAT-PAK test kits to each of the facilities as part of a large-scale tuberculosis study, and each delegate was instructed in the proper use and interpretation of the results. The PrimaTB STAT-PAK testing kits are considered useful in the detection of tuberculosis in primates, a severe respiratory disease that can prove deadly.

The OC 2010 Veterinary Workshop was sponsored by the Birmingham (U.S.) chapter of the American Association of Zoo Keepers (AAZK), which once again directed the proceeds of its annual Zoo Run to support the workshop. Other sponsors included a Cleveland Metroparks Zoo / Cleveland Zoological Society Asian Seed Grant, the Chester Zoo, and the Orangutan Conservancy, in association with the Liverpool School of Tropical Medicine, Chembio Diagnostics Systems Inc., Murdoch University, Abaxis (Europe) and the Sumatran Orangutan Conservation Program (SOCP).

The OC 2010 Veterinary Workshop included 26 participants from the orangutan rescue and rehabilitation centers in Indonesia and Malaysia, along with experts and facilitators from the United

States, the United Kingdom, Australia, and Germany. The OC 2010 Veterinary Workshop was designed and facilitated by Dr. Steve Unwin of the Chester Zoo, in partnership with Dr. Raffaella Commitante of OC, the same team that helped create the format a year ago.

In addition to presentations, practical demonstrations and roundtable discussions, the delegates made site visits to the SOCP facility and the Bukit Lawang orangutan feeding station, and tested their own fortitude by engaging in a durian-eating contest.

But the focus of the OC 2010 Veterinary Workshop remained the practical sessions, presentations, roundtables, and break-out groups that make the workshop so valuable. There, veterinarians who often work alone under extreme duress got a chance to pose questions and tackle hypothetical scenarios that might otherwise get overlooked. They also established friendships and alliances that strengthened the orangutan conservation community as a whole.

At the OC 2009 veterinary Workshop, the delegates took the bold step of forming the Orangutan Veterinary Advisory Group (OVAG), which quickly became a forum for issues such as contraception, reintroduction, diseases, and other hot-button topics. In Sumatra, the OVAG continued to tackle tough issues, such as euthanasia, laboratory politics, veterinary aspects of eco-tourism, field diagnostics, fundamentals of environmental enrichment, disease case studies and tuberculosis testing. In this way, the OC Veterinary Workshops have helped build a community of veterinary healthcare experts that stands strongest when it stands together.





## Orangutan Conservancy 2010 Veterinary Workshop

### Workshop Report

August 2- 6, 2010

#### Workshop Budget

ITEM	UNIT COST	TOTAL
Airfare (International)	\$2,000 x 3	\$6,000
Airfare (Domestic)	\$400 x 19	\$7,600
Accommodation	\$60 x 24 x 5 nights	\$7,200
Ground Transportation	\$500	\$500
Printing	\$300	\$300
<b>TOTAL</b>		<b>\$21,600</b>



## Orangutan Conservancy 2010 Veterinary Workshop

### Workshop Report

August 2- 6, 2010



### Section 2

## Official Letter of Invitation



*Dedicated to the Conservation of  
Orangutans and their Rainforest Home*

**Honorary Patrons:**  
Dr. Jane Goodall  
Dr. Edward O. Wilson  
Dr. Suwanna Gauntlett  
Djamaludin  
Suryohadikusumo

**Advisers:**  
Dr. Tim Laman  
Dr. Mark Leighton  
Dr. Amory B. Lovins  
Dr. Cheryl Knott  
Lori Perkins  
Dr. Herman Fijksen  
Dr. Anne Russon  
Dr. Robert Shumaker  
Dr. Wille Smits  
Dr. Carel Van Schalk

**Directors:**  
Norm Rosen, Chair  
Shirley Randolph  
Dr. Anne Russon  
Dr. Rob Shumaker  
Dr. Raffaella Commitante  
Barbara Shaw  
Juanita Kemp

**Officers:**  
Doug Cress  
Linda Keenan  
Janice Boston  
Julie Cash  
Dr. Stacey Sowards

June 1, 2010

RE: Orangutan Veterinary Advisory Group Workshop 2010  
Lokakarya Kommunitas Dokter Herwan Orangutan 2010

To Whom It May Concern:

This letter shall serve as an invitation to attend the Orangutan Conservancy Veterinary Advisory Group Workshop 2010 sponsored by the Orangutan Conservancy (OC), a United States not-for-profit organization and its Orangutan Crisis Coalition (OCC), and hosted by The Sumatran Orangutan Conservation Program (SOCP) to be held at The Hill Hotel and Resort in Medan.

This, our second workshop, will bring together experts working closely with orangutans in Indonesia and Malaysia and in the international community to allow for the sharing of information and the creation of long lasting friendships and contacts. It will be held:

August 2 – August 6 2010

Participants should plan to arrive on August 1 and leave on August 7.

We thank you for your participation in allowing your staff to attend.

Travel expenses to the workshop and home again as well as accommodation will be paid for by the Orangutan Conservancy during the workshop.

Respectfully,

Raffaella Commitante, PhD

Orangutan Conservancy / P.O. Box 513 / 5001 Wilshire Blvd. / #112  
Los Angeles, CA / 90036 / USA /  
[www.orangutan.com](http://www.orangutan.com) / [info@orangutan.com](mailto:info@orangutan.com)



**Orangutan Conservancy 2010 Veterinary Workshop**  
**Orangutan Veterinary Advisory Group Workshop (OVAG)**  
**August 2- 6, 2010**

**Agenda**

**Sunday, August 1**

Delegate Arrival / Set Up of Sessions

**Monday, August 2**

- 08:00. Welcome to delegates
- 09:00 Veterinary Aspects of Reintroduction Part 1  
Risk Analysis Recap / Mapping the Pathway (Steve Unwin)
- 10:30 Coffee/Tea
- 11:00 Veterinary Aspects of Reintroduction Part 2  
Mapping The Pathway Exercise (all delegates)
- 13:00 Lunch
- 14:00 Veterinary Aspects of Reintroduction Part 3  
Disease Risk Assessment Exercise (all delegates)
- 15:30 Coffee/Tea
- 16:00 Reintroduction Round Table

18:00 Dinner/Ice Breaker

### **Tuesday, August 3**

08:00 Tuberculosis and ChemBio Report (Steve Unwin / Citra Kasih Nente)

09:30 New Technologies in Diagnostics (Wendi Bailey/ Steve Unwin)

10:30 Coffee/Tea

11:00 Veterinary Aspects of Reintroduction Part 4

Disease and Contingency Planning (all delegates)

13:00 Lunch

14:00 Disease Contingency Planning – TB Case Study (Steve Unwin)

15:30 Coffee/Tea

16:00 Case Studies: Viral Pathogens In Orangutan (Pak Joko/Nyaru Menteng Vets)

### **Wednesday, August 4**

08:00 Bus to SOCP Quarantine

09:00 Practicals / Diagnostics / Parasitology (Wendi Bailey)

Primate Enrichment (Steve Unwin w/ materials from Sabrina Brando)

13:00 Lunch

14:00 Group Photo

Local Fruit Taste Testing

16:00 Bus to Bukit Lawang (National Park/Orangutan Release Area) for Overnight Stay

19:00 Dinner at Bukit Lawang Eco Lodge

### **Thursday, August 5**

08:00 Forest Walk Through National Park (Taman Nasional Gunung Leuser) to Orangutan Feeding Site

Observation of Orangutan / Visitor Interaction

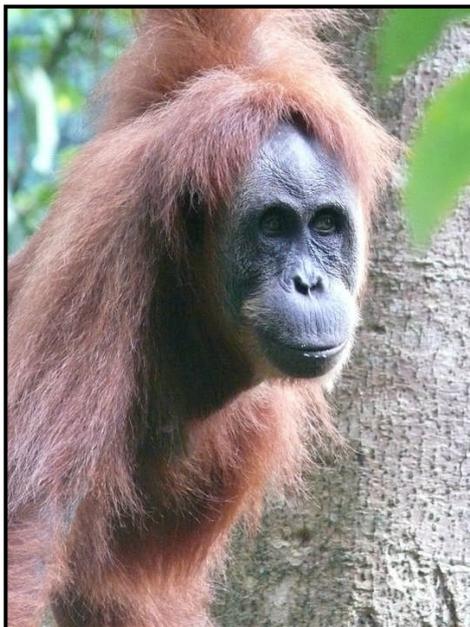
11:00 Meeting with National Park Rangers and local Guides

### Ways to Improve Orangutan / Visitor Interaction

- 13:00 Lunch with National Park Rangers
- 15:00 Visit to Eco-Farming Facility, Yayasan Ekosistem Lestari (YEL)
- 16:00 Bus Back To Hill Hotel, Sibolangit
- 19:00 Dinner

### **Friday, August 6**

- 07:30 Q and A from Exercises of Day 1 (Reintroduction)
- 09:30 Coffee/Tea
- 10:00 Risk Assessment Quiz/Review
- 11:30 Friday Praying Time / Lunch
- 14:00 Review of Medical Tests (Wendi Bailey)  
Evaluating Tests, Equipment and Labs (Wendi Bailey)
- 15:00 Euthanasia Discussion and Recommendations
- 17:00 Overview of the past year/Veterinary Needs/Diagnostics
- 18:00 Closing Dinner / Presentation of Certificates





## Orangutan Conservancy 2010 Veterinary Workshop

August 2- 6, 2010

### Participant Contact List

	<u>Name</u>	<u>Affiliation</u>	<u>Email</u>
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21	Dr. drh. Joko Pamungkas	IPB/PSSP	
22	drh. Melanie Panayiotou	Murdoch University	

23	drh. Muhammad Wahyu	VESSWIC	
24	Dr. Reuben Sharma	Putra University, KL	
25	Dr. Sumita Sugnaseelan	Putra University, KL	
26	drh. Winny Pramesywari	Frankfurt Zoo/Jambi	





## Orangutan Conservancy 2010 Veterinary Workshop

### Workshop Report

August 2- 6, 2010



### Section 3



## **Orangutan Conservancy 2010 Veterinary Workshop**

### **Workshop Report**

**August 2- 6, 2010**

#### **Proceedings**

##### **Opening Comments and welcome**

“Welcome everyone to our 2<sup>nd</sup> Annual Orangutan Veterinary Advisory Group Workshop for 2010. I am happy to see old friends again and some new ones. I know this workshop will be as successful and productive as the 2009 meeting. I want to thank Ian Singleton and SOCP as well as YEL for all their help and a special thank you to Anta for her invaluable assistance in the preparation of this workshop. I also want to remind everyone that next year’s workshop will be held in Jogjakarta with Gadjadara University as our in country host. We are looking for someone to host in 2011 and I am hoping we will get some volunteer organizations coming forward before we leave. Again, welcome and I know this will be a great week.”

-- Raffaella Commitante, Orangutan Conservancy

## **Veterinary Aspects of Reintroduction (Steve Unwin, Chester Zoo / NEZS)**

### **Introduction**

The main focus of this year's workshop will be veterinary aspects of primate reintroduction programmes. Reintroduction should follow the IUCN guidelines. The CBSG has put together a risk analysis workbook on Animal Movements and Disease Risk, itself based from discussions at several workshops. Based on these notes, we have put together a basic workbook based on these notes for veterinary aspects of reintroduction. We will work through this over the next several days, to provide you with the tools to return to your centres and create a more comprehensive animal health plan for your reintroduction programmes. The tools used here are disease focused. Health risk assessments can be taxon focused or area focused. The strategy used will depend on what questions you are trying to answer. It has been found for a reintroduction programme, concentrating on diseases makes the most sense. If however you are trying to assess your quarantine area, a different approach could be used. The following process is generic enough however to allow adaptation to a variety of different scenarios.

What is the aim of reintroduction? One area that has been mooted is use of reintroduction programmes as a conservation tool. The Pan African Sanctuary Alliance (PASA) programme logic for reintroduction (Lucas 2007, incorporated in the PASA Operations Manual Farmer et al 2009) highlights how a properly conducted reintroduction programme can be utilized as a conservation tool. Even if no individuals get released, you still will have contributed to biodiversity protection by following the steps as outlined in this chart.

*(Note: Copies of the IUCN Great Ape Reintroduction Guidelines, the Animal Movements and Disease Risk workbook, the Veterinary Aspects of Primate Reintroduction Workbook, and the PASA Operations Manual were provided as pdf files to delegates during the workshop.)*

### **Fundamentals of Disease Risk Analysis**

Please refer to the Veterinary Aspects of Primate Reintroduction Workbook, attached with this report.

Risk analysis allows us to highlight areas of uncertainty or data gaps, which we need to fill if we are to make sound, scientific evidence based decisions.

There is no such thing as zero risk – all we can do is reduce that risk.

You must ask the right questions and have accurate information presented to you in the correct way – as scientists, you know that what you read may trigger questions, and that you need to know if what you are being told is accurate.

There will always be areas of uncertainty, but knowing the big picture of your reintroduction, that is, the aims and long term plan, helps you concentrate on areas of most concern.

### **Does it require further investigation?**

Diseases happen in the wild. For example, Simian Foamy Virus (SFV) has been isolated in captive monkeys and apes, cows, people as well as wild primates. No clinical signs have been noted. Do we test for a potential pathogen like this for our reintroduction programme? Why or why not?

We are data deficient in this area. The more data that is collected the better we are able to answer these questions.

You may decide that if there are no pathological findings, as with SFV, there is no reason to take it further. But it is important to keep up with current research as new data is becoming available constantly that may have implications for your animals.

The Hepatitis B issue is relevant with many rehabilitation orangutans. We know now that picture is much more complicated and the more information we get the better we are able to make better decisions. We know now that Hep B has simian strains and a human strain, and that the orangutan strain has been isolated from wild orangutans and many of the rehabilitated orangutans. Keeping up with current research and information is key to making a list of diseases that need attention and testing.

Primate reintroductions occur. Chimpanzee reintroductions in the Republic of Congo and Guinea were discussed.

Some relevant papers were discussed (*Note: all provided as pdf's to delegates*). A central database of relevant abstracts is being put together online by Columbus Zoo (USA) and PASA. ([www.pasaprimates.org](http://www.pasaprimates.org)).

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## **Disease Risk Assessment (Steve Unwin)**

It is important to publish results – good or bad – to help future releases change and improve.

We will be conducting the first stages of a risk assessment / risk analysis, including risk mitigation strategies such as targeted bio-security and disease contingency planning. This is a continually evolving process and involves ongoing communication – making sure that everyone understands what is going on.

Assessment steps:

### **Step 1. Tell the Story – What is Your Project Doing**

PASA example. 3 sanctuaries – potential collaboration – risk assessment needed for 2 subspecies as the centers did not want to mix subspecies. This is not of concern for your orangutans per se. So what is important to you?

### **Step 2. Define the Questions – Identify and Define Potential Problems**

What are they exposed to? What will they release into the environment? What is the likelihood that something will happen – Exposure – what are the consequences of that exposure – what is the severity

What will be a threat from the environment to the release animals?

What is the probability that an infected animal will be released?

### **Step 3. Map the Pathway – Completely Outline the General Pathway**

What are the steps the individual will take to get to the wild

### **Step 4. Potential Hazard Identification**

Once you have a pathway, what are diseases that we may be concerned about?

Knowing what is important will come – review steps in workbook

### **Step 5. Create List of Hazards (Rough Assessment)**

Establish ranking criteria

Rank of 1-5 for each question in the workbook. Stick to these questions for now, but the process means you can create your own questions to tailor them to your specific situation. When ranking, back up your ranking with either published data/gut feeling/ or whatever... but document it – and stay current as

rankings may change. You will note that this is VERY subjective, hence this is only a rough assessment to make sure you don't miss important diseases

Example discussed: Mountain Gorilla Veterinary Program – effects of disease on wild populations

Their questions: Disease/ Source / Is it found normally in population / Justification / Follow-up required

A disease example: Measles/In people in the area? – No. But - High mortality? - Yes

**Step 6. Define Specific Question and Policy/ Scenario**

What is the likelihood of introducing diseases after following your model

**Step 7. Build the Model / ID Critical Control Points**

What can be the control points? Where could have control of the disease fallen

**Step 8. Perform Qualitative Assessment**

**Step 9. Quantitative Assessment (If Required)**

**Step 10. Describe Uncertainty**

Risk Management/ mitigation strategies can then be recommended because you can:

- Identify where better data are needed
- More data are always good as things may change
- Focus research goals
- Collect more relevant data

Keep communications open between:

- Local farmers
- Government
- Communication between field sites – this has been a problem in the past but without proper communication, sharing of information, and continuous contact – releases will fail

Where and how is the information kept? There needs to be continuity so that staff changes are smooth because information is clear and accessible

Everyone must communicate! Keep your contact continuous between all stakeholders.

### **Break Out Sessions**

Breakout Sessions AIM: To provide delegates with the tools to create their own comprehensive veterinary programmes for their reintroductions utilizing risk analysis principles. It was acknowledged that this precise method was only one way of conducting this, and delegates are recommended to research other possibilities. It was also acknowledged that we would not have the time to complete the process within the workshop, thus one of the actions would be for presentations of completed programmes at the next workshop. Also, this was the first opportunity for most of the delegates to look at the 'big picture' of their projects and voice any concerns. As such, these notes should be viewed very much as a first draft

Groups 1-4. Case studies of four reintroduction programmes.

Group 1 – SOCP - Yenny, Rachmad, Ian, Wahyu, Winny

Group 2 – OFI - Popo, Fikri, Adi, Eriansyah, Melanie

Group 3 – Nyaru Menteng - Siska, Citra, Wendi, Barbel, Joko, Reuben

Group 4 – Samboja - Agus, Sumita, Anta, Hery, Karmele

#### **Session 1. Step 1, 2 and 3. Tell the Story / Define Questions / Map your Pathways**

NB, these pathways are reproduced, with critical control points, within session 3.

#### **Group 1: SOCP-VESWIC. Presenter: Ian Singleton**

The project was under pressure to capture orangutans that are isolated in Palm oil plantations/confiscated from BKSDA. Since beginning there have been 9 deaths out of 198 orangutans. The project provides long term care for blind or other un-releasable individuals

Jambi is the release site – fruiting phrenology key – into socialization cages in the release forest, some that are manageable can spend time in the forest, others are exposed to as many forest fruits as possible – then when ready they are taken several kilometers into the forest for release. Teams of field staff for long term monitoring when possible – some individuals are seen repeatedly, some are lost,

when problems occur with illness or injury, they can go back to medical care at Jambi – most serious of those go back to SOCP

A female orangutan from Perth (Tamara) was sent to SOCP for release through Leif Cox – along with the female came funding support as well as political support which offset the problems of releasing a zoo ou

What happens to unstable individuals – are all individuals scheduled for release? Yes. However, each case is different - How do you know when an orangutan is ready for release? What is confidence level?

### **Group 2: OFI - Camp Leakey. Presenter: Drh Popo**

Confiscations to quarantine: 3-day minimum for testing,

Post release monitoring for 10 days – release site Lemandau with feeding platform, sometimes wild orangutans come through – if babies are found without mother – they are paired with an adopted ex-captive mother –who acts as an auntie – pre release quarantine for 30 days – **it should be 90 day quarantine for pre-release** – monitoring is done for health condition, fights, etc., 200 orangutans in 70 hectares – how many can the area hold? Carrying capacity?

Medical check with collected samples – Worms/eggs found in monitoring of released individuals,

### **Group 3: Nyaru Menteng. Presenter: Drh Siska**

1999 start - 62 hectares, 597 ex-captives and 17 waiting for translocation – by 2013 , 75% of the population will be released – 30% infants, 20% at least 7 yrs old, and 50% over 7 and ready for release

Difficulties are a secure forest location for release, site has been located with 300 orangutan carrying capacity

Release 24 in a group – 3 groups per year until 2015

Quarantine 30 days or until test results return, then to Forest schools, then to pre-release islands (soft release). From islands they are ready for release to a forest, they have inserted implants for post release monitoring – they will spend some time in the forest before going to actual release area

Anticipated problems:

Over population (they are currently at twice the capacity)

Behavioral problems on islands sometimes mean they must return to cages which impairs their forest skills. Check for Parasites, TB, Hep B, Typhoid, still no Standard Operating Procedures – is this enough? Are there problems that are being missed? About 10% are not releasable.

### **Group 4: Samboja / Wanariset. Presenter: Drh Anta**

1991 start – two release sites Sungai Wain (30 to 1997) and Meratus – (300 since 2003) – limited post release monitoring – now a new place for a release has been located, 4 population categories:

1. Healthy – releasable
2. Hep B – 35 individuals but not known whether human or simian – budget constraints
3. Ex TB – had TB but were treated with human meds – un-releasable as they relapse or are re-infected – difficult to know which
4. Active TB – un-releasable – what are the possibilities/solutions for groups 3 and 4

Finding release sites

Orangutan – confirm health status, behavior assessments to find orangutans for release, have preliminary data on releasable orangutans, survey has been done on carrying capacity, socio economic survey (local people surrounding area of release)

Budget – needs to be set in place

Government and local people for support for the area

Increase awareness / education in the area

Man power on the ground for post release monitoring

Transport issues to the release area – difficult to get to which is why it is still pristine

High cost of testing – Pak Joko spoke on behalf of his lab in IPB – reagents and material is expensive as it is bought abroad – so difficult to cut costs even for sanctuaries/centers

Release sites – Ekosystem restoration Concession land available at the same cost as if you were a regular concession for 60 years renewable to a 95 year maximum

## **Session 2 – Step 4 and 5. Hazard Identification and Rough Assessment**

Return to the four groups and produce hazard list, rank them in a rough assessment and define questions that need answering for each hazard – follow workbook guide

Make a list but categorize only the first 10-15.

List of 25 diseases of immediate concern compiled – each participant took a disease to research and investigate on the list.

### **Diseases:**

Mycobacterium complex

Salmonella typhi

Shigella

Strongyloides

### **Researcher:**

Citra

Sumita

Ian

Anta

Balantidium	Siska
Entamoeba	Siska
Plasmodium	Reuben
Hookworm	Yenny
Hepatitis B	Winny
Streptococcus	Agus/Melanie
Haemophilus	Agus/Melanie
Klebsiella	Agus/Melanie
Pseudomonas	Agus/Melanie
Pasteurella	Karmele
Malnutrition	?
Clostridium	Popo/Fikri
Burkholderia pseudomallei	Rachmad
STLV	Imung (Joko)
SRV	Imung (Joko)
EMCV	Steve
Candida	Yenny
Dengue Fever	Siska
Micosporum spp	Popo/Fikri

**Session 3. Step 6 and 7. Define Specific Question and Policy / Build the Model /ID Critical Control Pts.**

What can be the control points? Where could have control of the disease fallen

Pick five diseases to work on. For these diseases, what could the possible disease path be? – Where could disease enter the population or exit from the population? Then begin to think of what can be done to mitigate these disease risks

Review the remaining steps in dealing with diseases of concern at the several control points

Group 1. SOCP – tracked CCPs for Salmonella

Group 2. OFI – tracked CCPs for strongyloides

Group 3. NM – tracked CCPs for malaria

Group 4. Samboja – tracked CCPs for TB (as TB is endemic in human populations in KalTim)

Citra also tracked the spread of TB through the population of Samboja from 1998 through to 2010.

What should be done with ex Tb and TB orangutans?

Once you treat orangutans for TB they are virtually out of any reintroduction? YES

### **Step 8-10**

ACTION: Enhance and complete work conducted within this workshop and conduct qualitative +/- quantitative assessments in time for presentation at the 2011 workshop.

Introduction to various computer programmes that may be of interest and use for disease risk (refer also to the Animal movements and disease risk workbook)

Useful Software

POPULATION MODELLING - Vortex [www.cbsg.org/cbsg/vortex](http://www.cbsg.org/cbsg/vortex). Models population viability

RISK ANALYSIS - @risk - [www.palisade.com/risk](http://www.palisade.com/risk). Most widely used risk analysis tool on the internet

DISEASE INVESTIGATION - Epi-info – [www.cdc.gov/epiinfo](http://www.cdc.gov/epiinfo). Database

WILDLIFE DISEASE RISK ASSESSMENT – Outbreak <http://www.vortex9.org/outbreak.html> Can be coupled to Vortex

### **Session 4. Risk Mitigation Strategies / Disease Contingency Planning**

#### **Infection with Tuberculosis complex (human/bovine). Steve Unwin**

What's affected? Primates. Hoofstock. Wildlife reservoir. This disease is a zoonosis

Is there legislation that controls the movement of animals with TB? Knowing the law is part of risk assessment

What is the public perception of human health risk?

How do you handle media interpretation of disease events?

What is your current strategy for preventing TB ?

- 90 day quarantine?
- Separate groups of suspected cases?
- Restrict human contact – bio security measures?

Is this a disease of concern that requires management?

No one currently has a disease contingency plan in place for TB

EXERCISE: Create a draft contingency plan for a disease of your choice. Can utilize the same diseases as conducted in Session 3. These can be discussed over the coming months, to make sure all aspects have been considered. You can then use this as a template to create other contingency plans.

Group 1. SOCP: Salmonella Contingency Plan / Presenter: Winny

Main Routes of transmission	Contingency Plan
New Arrivals	Screening Quarantine: 60 - 90 days If positive, treatment initiated and individual isolated
Infected Existing Animals	Isolation of active animals in treatment Carriers: routine screening and isolation
Wild and Domestic Animals	minimize possible entry and contact in food preparation area, utensils, equipment, etc.
Food Source	Clean, reliable source
Fomites	Clean equipment regularly No sharing between facilities/sectors
Waste Management	Proper disposal of waste food to prevent/discourage wild animals from gaining access Proper routine cleaning and management of waste material especially from infected cages/sectors
Personnel	Routine screening of existing staff Screening of new staff Use of P.P.E. when handling potential cases of salmonellosis Infected personnel must be given necessary support: I.e. treatment and time off for cure
Visitors	Control and regulate contact with animals at facilities
Proper Disinfection Protocol	Personnel/Equipment/Environment!

Group 2. OFI: Entamoeba Contingency Plan / Presenter: Adi

Main Routes	Contingency Plan
New orangutans	Control/prevention - isolation, hygiene, fecal tests on arrival and 2 more
Infected humans	Control - hygiene (wash hands, protective clothing) Isolate in restrictive area / Test staff / Prevent contact with visitors Fecal contamination (waste)
Food	Control: clean water source, wash food items, control source fo food
Fomites	Control vehicles into quarantine/center Control/restrict visitors Foot baths: disinfect or change shoes / Coveralls, protective clothing, masks
Outbreak	(Positive fecal entamoeba/clinically sick Clean area with disinfectant / move to individual cage for isolation Limit staff access / Must wear protective clothing which stays at isolation area Foot baths - clean and change shoes Appropriate treatment /fecal test for all other orangutans NO movement of people, animals, or equipment between epidemiological units (Clinic / Isolation cages / Quarantine / New Arrivals / Socialization cages or areas

Group 3. NM: Malaria Contingency Plan / Presenter: Reuben

Main Routes of Transmission	Contingency Plan (Reduce Risk Transmission to/from Center)
Mosquito (Vector)	Aim: to control vector population Preventative measure: to reduce breeding site vectors Plant anti-mosquito plants Fogging (chemical control)
Wildlife (NHP/Macaque)	Aim: reduce contact/distract macaques from the center How: Population control - Birth control/provide food outside of center (Ablenk Manover)
Infected Human	Aim: reduce transmission from human to population in the enter How: Health surveillance on community and staff around the center /restrictions for visitors

Early Warning System	
Screening for malaria	Aim: current status of malaria How: screen orangutans and staff routinely / collaborate with local health service (PUSKESMAS)
Data Analysis (OU and human)	Aim: to know the trend of malaria How: Improve medical records/special recording of malaria/Human data from PUSKESMAS
If outbreak...	Isolate the center and positive orangutans - epidemiological units Stop orangutan movement / Stop receiving new orangutans/check entire population Treatment for the entire population Media communication (Public information) / Check current community situation (PUSKESMAS)

Group 4. Samboja: Salmonella Contingency Plan / Presenter: Winda

Main Routes	Contingency Plan
New Arrivals (Confiscations)	Aim: prevent introduction to orangutans in quarantine Ask for complete information about new orangutan (source/other animals that are owned/diet/ etc. Clean transport box thoroughly - using disinfectant and any other equipment or tools used with that individual (coco fiber) Use gloves and mask
Quarantine	Medical Check up Isolation: 30 day minimum Food Prep: wash all fruits/vegetables Proper sanitation and safety for Staff (boots, gloves, masks, coveralls Control presence of pests and rodents (in food storage and cages) Regularly disinfect cages, isolation areas, and enrichment devices
Transportation to Reintroduction site	Disinfectant of transport cages and any accompanying items (coco fiber) Wash all fruits and vegetables and give boiled water only Limit contact with humans (driver only?)

Reintroduction Site	Wash all fruits and vegetables SOP for safety and sanitation of staff Disinfect all temporary cages and enrichment Limit contact with humans (to include local people, researcher, guest) Close the septic tank
Release Site Forest	Release orangutan into the main area of the forest (far from any villages)

## QUIZ

### Risk Analysis

1. Knowledge of animal behaviour is one of three areas that help you make an evidence based decision in a medical case. What are the other 2?
2. Define risk.
3. What are the three basic areas of a risk analysis? What are the 10 steps of a risk analysis?
4. List 5 diseases that you are concerned with in your orangutans. Use a sentence or 2 for each to explain why.
5. What is a critical control point?
6. In a drawing, illustrate the difference between precision and accuracy.
7. What is the difference between specificity and sensitivity in a diagnostic test?
8. Name three factors that influence outcome of diagnostic test results.
9. What information do you need to initiate a disease contingency plan?
10. What is bio-security?
11. Define quarantine.
12. Your manager wants an update on your veterinary programme for your release. How do you present it to them? Verbal or non verbal? A written report? A powerpoint or similar? On Skype? Over a cup of coffee? A combination?

### Summary of responses:

Animal behavior, clinical experience/findings, research (other scientists, literature review) – this will inform you on how to manage that situation, then you can inform your manager – of course it helps if that manager is a vet, but the more informed you are the better informed your manager (who will ultimately make the decisions?)

Know the meaning of specificity – tests that are highly specific for perhaps one disease may not give you all the information you are really looking for. One of the main things to discover is how a disease is transmitted.

Know how to use the test correctly. Understand prevalence. Reliability of the samples – be sure you are sending the proper sample for the test you are doing. The quality of the test itself – are you using the correct test for what you are looking for?

How do you relay information to the manager/ head

Sometimes you need to visually demonstrate to keepers by actually doing the procedure as you want it done until they get into the same rhythm – for managers, an informative PowerPoint should give them a better understanding of what you as a vet need and are up against – include a chart of your collected data – with data, you can say you know something is happening rather than you think something is happening – clinical accurate findings is key to supporting your case - you also should give your manager options on dealing with the issue

**RISK ANALYSIS ACTIONS:**

Present completed plans at the 2011 workshop  
Present OC 2010 Veterinary Workshop report to CBSG for input

## **FIELD TRIPS**

### **Wednesday August 4**

Trip to SOCP Quarantine

At quarantine, Wendi presented parasitology session (see below)

Group divided into 3 sub-groups: with Wendi for Parasitology session / with Steve for Enrichment session / with Rachmad and Ian for center tour

Durian fruit feast

Bus ride to Bukit Lawang

### **Thursday August 5**

Day at Bukit Lawang (Gunung Leuser National Park) – to orangutan feeding station

Informal discussion with Taman Nasional staff/rangers to offer suggestions on how to improve conditions between orangutans and tourists in the Park

Lunch with Park Rangers

Visit to Eco-farming facility run by YEL

Return to Hotel

## **Field Parasitology and New Technologies (Dr. Wendi Bailey)**

Parasitology review from last year's meeting – parasitological slide quiz (Available on request)

New tuberculosis test by QBC – Previously it was quite expensive and difficult – but now there is a microscope add-on objective with LED light and a solar battery or regular electricity – can come with several magnifications and can be used with a simple dye – Oramine O – being used by WHO and results look good – even a few bacilli stand out and is very fast – cost is about 1,000 BPS – perhaps one can be shared by all used for different tests that require a fluorescent dye – Wendi can bring this equipment next year to demonstrate –

Who decides what tests you use?

What is the reason for testing?

Is it population surveillance or individual testing?

Whatever the test, are you collecting the correct sample?

Sensitivity? is this information available? Ask!

Specificity?

Cost?

Reliability? (quality of method/reputation of laboratory)

Availability? (on site? Locally? Overseas?)

Time to obtain results?

Usefulness of results/interpretations?

### **Group Discussion**

When choosing a lab: do not rely only on reputation – ask questions about their maintenance schedule, the staff, reliability – you must have this information or else you are endangering the orangutans in your facility.

Some human labs will not always give information when animal samples are involved – most labs are located on Java

Normally the vets ask labs only if they can do the test – they usually do not ask about specificity or sensitivity, the lab technicians usually do not know those things either – they are just doing what they are told to do –

Lab kit information is usually available on line – so you could get information there –

What are the possibilities of creating a lab that all the centers can use?

There are items available that work in the field – it is expensive but the cost of sending everything out to other labs is in itself is a very high cost and the results may not be correct

However, maintaining equipment to its proper standard is difficult and moving specimens from island to island is also tricky

Proper care of microscope – in a light box with silica – can preserve the life of your equipment

Practice taking blood smears, do not rely on equipment as it may fail

You should stay informed about new tests coming out and also be able to compare them with older tests – new may not always mean better

There are machines that are out there that are robust and do not break down easily

Do you have a list of what equipment and tests you would want?

On page 61 in the risk handout – what is the ideal test? What can we use if that test is not available?

As vets, we tend to forget that we can do our own tests – you as vets can actually do many things in the field with a good microscope and some simple stains

Of course, you will need to use labs for more complex testing, but basic tests can be done simply in the field

Blood cultures?

What can be diagnosed on site and how reliable?

Floatation and direct smears can miss things

Each floatation methods are designed for a different worm - getting a simple test that can identify many rather than one

Freeze fecal samples if they are less than 24 hours old –

Many antigen tests are on the market and they are reliable – might be worth thinking about – can be read without an Eliza

PCR – difficult to interpret results for fecal parasites and it takes ages to get result back

Various things can be used to preserve the integrity of the sample for proper testing

Build a relationship with the lab you use so that they understand the priorities of your samples – perhaps invite the lab people to your facility – involve them – give them a personal connection to your samples

The storage for preservation of samples is key for getting good results – know how to keep the and preserve samples

All centers must prepare a list for next year's workshop of:

- What do you have and use on site
- What issues are you up against
- What you can do
- What you can't do
- What you would like to do

## **Tuberculosis Discussions: (Steve Unwin and Citra Kasih Nente)**

### **Steve:**

2 years ago there was an outbreak of human TB in vervet monkeys in South Africa – Chembio Diagnostics offered a serological test to look for TB in primates (as well as other species) but it has not been validated in great ape species – so we are validating their test to see if it is useful in finding TB in great apes. The StatPak with the skin test actually improves chances of a proper diagnosis. As surveillance tests, they need further testing after a positive reading. A joint proposal (a collaboration between PASA and Orangutan Conservancy) was given to Chembio for the donation of the following kits: 250 gorillas, 1000 chimpanzees and over 1500 orangutans - because of such a large group – the results are more apt to be more accurate – We suspect that the StatPak and skin tests will increase the ability to diagnose TB.

The proposal includes the Chembio test validation as well as capacity building of staff in both PASA and OVAG. The number of false positives in orangutans can be quite high, whereas in chimpanzees in gorillas that is not the case.

TB samples and data should be collected by end of 2011. Data analysis from mid-2011

PASA samples will be sent to VLA in the U.K. OVAG samples still pending

Drh. Citra is contact person for all questions involving TB testing in Indonesia.

Serum or whole blood needed and results in 20 minutes – that is the benefit of the Chembio StatPak.

### **Citra:**

Brief overview in Bahasa Indonesia – further clarification of Steve's introduction

224 Orangutans have already been tested in NM. Testing at Samboja will begin as close of workshop. When more kits arrive, testing can begin at other locations (SOCP)

## **PRESENTATION - Citra**

Background and preparation

- OVAG CONFERENCE 2009: MTB COMPLEX IS ONE OF THE PROBLEMS IN REHAB CENTRES
- TO DIAGNOSE MTB COMPLEX IS DIFFICULT

- COLLATE INFORMATION (CURRENT SITUATION, PREVIOUS RESEARCH, OTHER GREAT APES)
- CHEMBIO PRIMA TB STATPAK
- RIGHT TIME
- DONATION (PRIMA TB STAT-PAK-CHEMBIO)
- COORDINATION (CENTRES; FUNDING; LABS; UNIVERSITY)

Research plan

SCREENING TEST (1ST ROUND)

- PRIMA TB STAT-PAK
- TST : AVIAN PPD & BOVINE PPD

CONFIRMATION TEST (2ND ROUND) ◊+VE ORANGUTANS FROM 1ST ROUND

- PCR-MTB COMPLEX
- CHEST RADIOGRAPH
- CULTURE MTB COMPLEX
- HISTOPATOLOGY
- AFB (?)

TST

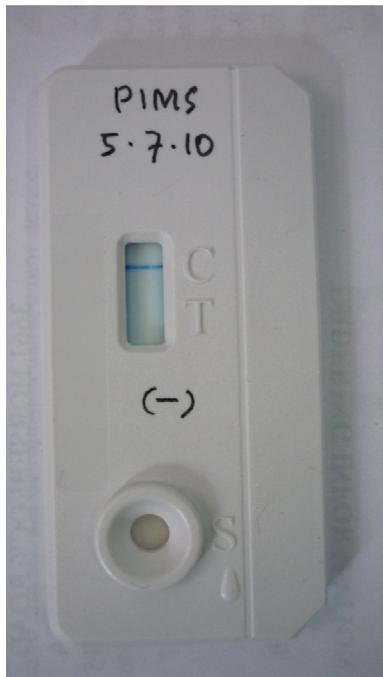
- SEDATED OU
- APPD : RIGHT EYE
- BPPD : LEFT EYE
- READ 24, 48, 72 H
- GRADE 0 TO 5 : 0-2 (-VE); 3 (SUSPICIOUS), 4-5 (+VE)



### Chembio Prima TB StatPak

- SERUM. ALSO POSSIBLE: WHOLE BLOOD, PLASMA.
- 30  $\mu$ l SERUM+3 DROPS SOLUTION
- READ IN 20 MINUTES
- POSITIVE: LINE IN CONTROL (C) AND TEST (T)
- NEGATIVE: LINE ONLY IN CONTROL (C)





- 225 OU HAVE BEEN TESTED-BOS NYARU MENTENG
- PRIMA STAT-PAK : 15 +VE (6.67%)
- TST : 115 +VE (51.11%)

#### Challenges

- LAB FOR PCR-MTB COMPLEX & CULTURE MTB-COMPLEX
- TST REAGENT
- Orangutans (Escape; stay overnight outside cage, etc)

Follow up: Pak Joko will speak to his team at Bogor Agricultural University as being the participating lab for samples in Indonesia

Reuben (Putri University) volunteered doing the sampling for free – problem is getting samples out of Indonesia

He suggested a tracheal wash, drying the fluid and bagging it and sending to Malaysia.

Discussion of TB presentation and testing – Q and A with Steve and Citra

## Euthanasia Discussion

When Should Euthanasia be Considered?

Some recommendation from participants:

- After first diagnosis, treated, then recovered but a relapse
- If the individual is a threat to the rest of the population and the quality of the individual's life is poor
- If a clinically healthy orangutan, then you find it is positive for TB – you can treat, if it gets better it can never be released – but if it is culture positive but otherwise healthy, then long term monitoring - but if it is clinically ill and can be spreading it and it is confirmed (in isolation) that it has TB, then it should be euthanized immediately

Center managers want some guidance as to what to do with TB individuals

- Current law in Indonesia (280, which is in revision) states that Euthanasia can be done but it must be approved by the PHKA office – if they agree then it can be done
- A letter of endorsement is needed to provide to the managers
- We want to conserve the orangutans to the best of our abilities. How do cases of TB interfere with that ?
- We have a confirmed disease, TB, if these cases can potentially devastate the entire population, then they need to be euthanized or must be separated from other individuals
- Remember, our goal is to reintroduce orangutan in protected areas.

Veterinarians working directly with TB individuals were asked for suggestions:

**Citra:** Would treat the first time – isolate, never to be released, if they relapse – then euthanize

**Siska:** Starting now, if an orangutan has active TB it should be euthanized

**Rachmad:** TB is in the top 3 diseases that cause human mortality, people are treated with a 3 combination drug. Rachmad's suggestion for orangutans is that drug use must be monitored, then after treatment, they should have two chances – once they get a round of meds, if they do not respond, try a different round of medication to see if there is any response – if they do not respond to the second round of meds, then euthanize

**Popo:** Same as Citra

**Yenny:** Same as Citra

**Adi:** same as Siska

**Ian:** Recommendation of vet and PHKA – treat once then if relapse, euthanize

**Karmele:** If the center cannot provide proper isolation and bio security, then okay to euthanize

**Winnie:** Same as Karmele

**Elizabeth:** This has to be a long term effort in order to maintain it

**Winda:** Same as Citra

**Anta:** Issue needs to be brought to PHKA – she has seen what has happened – agrees with Citra

**Steve:** How does the administration of drug treatments affect further testing – having latent orangutans is not a good thing – is the risk of treatment too big?

**Reuben:** Humans, can they be cured?

**Wendi :** No, not really, the load may go down and it is hoped they do not spread it – but cannot be said that they are ever completely clear

**Steve:** Will take this question to micro bacterial experts – just to be sure...

If animals are treated, never can be released: All Agreed

With Chimpanzees, and gorillas – chimpanzees were treated, they either did not respond or relapsed and died – PASA, if confirmed TB culture within a sanctuary –individual will be euthanized

With a suspect case, until the case is clarified – complete isolation for that individual –

**Citra:** If we only are going to euthanize new cases – we might as well decide to euthanize new and latent cases.

**OVAG Joint Recommendation:**

- All new active cases of definitely positive TB orangutans euthanized so as not to continue a TB population
- Previously diagnosed orangutans that have continuously relapsed – the recommendation is to Euthanize
- Orangutans that have been treated for TB and have responded well to the treatment, they can be put in a permanent separate sanctuary and managed to extinction

Before recommendation of the above, Steve will contact TB experts (medic and veterinarian) on the diagnostic regime after treatment to assess whether treatment will cause mis-reads on further testing

## **Rethink: Two recommendations**

1. Orangutans in general
2. For centers with an existing ex-TB population, follow the second protocol

Positive results of new cases should be euthanized – to determine TB status follow the table in OVAG 2009 Report – also, if you get a culture, if it is positive – it is TB, if it is negative, you do not know – combined with a PCR and follow up tests as stated in the table from 2009 Report. Possible protocol of testing, skin test, Chembio StatPak, Acid fast, PCR, Culture, also possible X-rays (if the unit is good and interpretation is correct and should be done lying down and standing) if are all negative – then that individual does not have TB to the best of our knowledge

BOS –Samboja, a sanctuary for latent TB if they have responded positively to treatment  
Because we do not yet know the trend – if they die we can investigate further – if they relapse – treat them again and if they relapse again then euthanize.

Viewing of TB Video from PASA: Dr. Lawrence Mugisha speaking on behalf of the African Sanctuaries and TB investigations there (Citra's African counterpart)

## **PRESENTATION: Viral Pathogens in Orangutan (Pak Joko)**

Covered several important primate retro viruses –

Simian retrovirus serotype-2 (SRV-2) – a natural aids in macaques

Simian T- lymphotropic virus (STLV) – naturally infects monkeys worldwide

Simian immunodeficiency virus (SIV) – naturally infects African monkeys, but Asian macaques is fatal

No evidence of SIV in orangutan – may be non pathogenic for humans

Natural infections of Hep B like virus occur in non-human primates

He called for a collaboration to research orangutan viruses





## **Orangutan Conservancy 2010 Veterinary Workshop**

### **Workshop Report**

**August 2 -6, 2010**

#### **Recommendations and suggestions for 2011:**

Timing: First week of July

Location: Gadjra Mada University, Jogjakarta

Nutrition and disease caused by malnutrition is a big concern from all delegates. Request that a nutritionist to join group next year. Steve suggested Dr. Andrea Fidgett (possible assistance from Chester Zoo), EAZA NAG chair.

In one month Raff to remind everyone of their disease research

Delegates asked to think about what test or group of tests can you do in the field ? What would you like to be able to do ?

What equipment do you need?

Rueben and Sumita – would travel to each center and evaluate what is available and possible at each center – Raff to coordinate – Wendi to oversee

Barbel: can get many things donated – will get list together to send to Raff to coordinate items to be hand carried in



## Orangutan Conservancy 2010 Veterinary Workshop

### Workshop Gallery

