



# DRAGON Asia Summit

*Connecting*

## Great Deltas, Great Rivers, and Great Lakes

June 22 - 25, 2009

Angkor Century Hotel, Siem Reap, Cambodia



### Summit Goals

The purpose of the DRAGON Asia Summit is to forge new global partnerships to develop the science needed to inform decision making in the Mekong, Mississippi, and other large river and delta systems around the globe.

- To explore new tools and visualization approaches integrating ecological, agricultural, and hydrological sciences with social systems, education, poverty alleviation, and other societal dimensions
- To bring investigators together to develop cooperative projects through special sessions

- To enhance and build an inventory of current river, lake, and delta science
- To develop a strategic vision that will guide future DRAGON efforts



8:00 AM

**Short Course Group I** – Knowledge Integration and Mapping

**Short Course Group II** – Anticipating and Adapting to Climate Change in Coastal Deltas

9:45 AM

**Refreshment Break**

10:15 AM

**Short Course Group I** – Anticipating and Adapting to Climate Change in Coastal Deltas

**Short Course Group II** – Knowledge Integration and Mapping

12:00 Noon

**Buffet Lunch**



**For details on short course contents and instructors' complete biographical information, see handouts to be distributed at registration.**

### Knowledge Integration and Mapping

This course will help participants value and differentiate (a) meaningful and mindful understanding of science; (b) episodic, procedural, and declarative knowledge in science; and (c) the types of knowledge claims scientists employ. Participants will explore computer-based visual knowledge representation, tag cloud diagramming, scientific concept mapping, and mapping software.

**Instructors:**

**James Wandersee**

Professor, Department of Educational Theory, Policy, and Practice, Louisiana State University

**Renee Clary**

Professor, Department of Geosciences, Mississippi State University

### Anticipating and Adapting to Climate Change in Coastal Deltas

This training will provide an overview of how climate change affects deltaic land forms and alters the processes that created and sustain them. Lessons learned from the New Orleans region of the Mississippi River Delta will be highlighted as well as new strategies for integrating climate change information in the design of levees, flood control structures, and coastal restoration projects.

**Instructor:**

**Virginia Burkett**

Chief Scientist for Global Change Research, U.S. Geological Survey, U.S. Department of the Interior

## Program Committee

### Chairs

- Gregory J. Smith, U.S. Geological Survey
- Jeb Barzen, International Crane Foundation
- Marc Gaden, Great Lakes Fishery Commission

### Committee Members

- |                            |                        |
|----------------------------|------------------------|
| Orestes Anastasia          | Richard Lowerre        |
| Brett Blackshaw            | John Pasch             |
| Geoffrey Blate             | Dmitry Pavlov          |
| Melissa Brown              | Juhani Platt           |
| Virginia Burkett           | Michael Reuter         |
| Hang Chanthon              | Dovas Saulys           |
| Sansanee Choowaew          | Tran Linh Thuc         |
| Richard Cronin             | Tran Triet             |
| Cristina Rumbaitis Del Rio | Michiel van der Muelen |
| Charlie Demas              | Ad van der Spek        |
| Andrew Herrup              | Duong Van Ni           |
| Hal Howard                 | Adam West              |
| David Hulse                | Siyuan Ye              |
| John Johnson               | Ping Yin               |
| Phiphakhavong Lammai       |                        |

### Sponsors

- U.S. Geological Survey (<http://www.usgs.gov>)
- International Crane Foundation (<http://www.savingcranes.org>)
- Great Lakes Fishery Commission (<http://www.glfc.org>)
- Caddo Lake Institute (<http://www.clidata.org/clinfo.htm>)

## Day One: Understanding

**2:00 PM – 3:00 PM**

### Opening Keynote Addresses - Session I

Welcome and Introductory Remarks

**Her Excellency Carol Rodley**

U.S. Ambassador to the Kingdom of Cambodia

Welcome and Host Country Remarks

**His Excellency Mok Mareth**

Senior Minister, Ministry of the Environment,  
Royal Government of Cambodia

Building Capacity Through Partnerships

**His Excellency Michael Michalak**

U.S. Ambassador to Vietnam

Implementing International Agreements for a  
Sustainable Mekong River

**Do Manh Hung**

Director, Operations Division, Mekong River  
Commission

**3:00 PM – 3:45 PM**

### Opening Session II

Deltas and Great Rivers: Science for Sustainability

**Susan Haseltine**

Associate Director for Biology,  
U.S. Geological Survey

North American Great Lakes: Challenges  
to Sustainability

**Robert Lambe**

Regional Director General, Central and Arctic  
Region, Fisheries and Oceans, Canada, and  
Vice Chair, Great Lakes Fishery Commission

The Role of the Tonle Sap in Shaping the Mekong:  
Past, Present, and Future

**His Excellency Tao Seng Huor**

Senior Minister and Chairman, Tonle Sap Basin  
Authority

**3:45 PM – 4:25 PM**

### Education Session

Education and the Environment

**His Excellency Im Sethy**

Minister, Ministry of Education, Youth, and  
Sports, Royal Government of Cambodia

**4:00 PM**

Harmonizing Natural and Human Landscapes:  
Education as the Key to Connecting Communities  
and Future Generations

**Gregory J. Smith**

Director, National Wetlands Research Center, U.S.  
Geological Survey

**4:10 PM**

Challenges and Hopes: Recent History of  
Education in Cambodia, Apsara, and the Kok  
Dong School

**Reth Chan Rattana**

Vice President, Apsara Foundation

**4:30 PM**

**Depart to Kok Dong Primary School**

*Meet in Lobby at 4:25 PM*

**4:45 PM**

**Arrive Kok Dong Primary School**

All participants are invited to receive an overview  
of education in Cambodia, the challenges, and  
the tenacity of the people and programs to build  
a society that understands the connections among  
education, ecological sustainability, and economic  
development.

**5:20 PM**

**Return to Hotel**

**6:00 PM**

**Opening Reception –**

**Pool Terrace, Angkor Century Hotel**

**7:00 PM**

**Welcome Dinner and Cultural Program –**

**Pool Terrace, Angkor Century Hotel**



Delta Research And  
Global Observation Network  
deltas.usgs.gov

**MONDAY**

**JUNE 22, 2009**

**DRAGON**  
**Asia Summit**  
*Connecting  
Great Deltas,  
Great Rivers, and  
Great Lakes*  
**2009**



# DRAGON Asia Summit

*Connecting*  
Great Deltas, Great Rivers, and Great Lakes

TUESDAY

JUNE 23, 2009

## Day Two: Exchanging

### 8:00 AM – 10:30 AM

#### Technical Plenary Addresses

North American Great Lakes: A Model of Interjurisdictional Management and Governance for Natural Resources

#### **Marc Gaden**

Communications Director, Great Lakes Fishery Commission

Options and Alternatives: Strategies for Economic Development and Ecological Sustainability

#### **Jeb Barzen**

Director of Field Ecology, International Crane Foundation

Visualizing Science for Better Policy Decisions: Animating the Impact of Mekong Hydropower Dam Projects

#### **Richard Cronin**

Director, Southeast Asia Program, Henry L. Stimson Center

#### **Tim Hamlin**

Research Associate, Henry L. Stimson Center

Agriculture and Development in the Mekong

#### **Le Quang Minh**

Vice President, National University-Ho Chi Minh City, Vietnam

A Regional Approach for a Sustainable Mekong

#### **Seng Teak**

Director, World Wildlife Fund Cambodia

Global Environmental Changes in Asian Coastal-Urban Zones: A Call for Action

#### **Anond Snidvongs**

Director, Southeast Asia System for Analysis, Research, and Training (START) Regional Center

Restoring the Natural Functions of the Mississippi River To Restore Coastal Louisiana: Policy, Stakeholder, Economic and Scientific Challenges

#### **Mary E. Kelly**

Senior Counsel, Center for Rivers and Deltas, Environmental Defense Fund

### 10:30 AM – 11:00 AM

#### Refreshment Break and Poster Session

*(Session chairs, meet at DRAGON information desk)*

### 11:00 AM – 12:40 PM

#### Concurrent Technical Sessions – Part I

- Session I – Climate Change and Challenges to Ecological and Economic Sustainability
- Session II – Envisioning New Approaches to Managing Great Deltas, Great Rivers, and Great Lakes
- Session III – Connecting People and the Ecosystems That Support Them
- Session IV – Reducing the Mekong Delta's Climate Change Vulnerability Through Regional Cooperation and Local Adaptations

### 12:40 PM – 1:30 PM

#### Buffet Lunch

### 1:30 PM – 2:50 PM

#### Concurrent Technical Sessions – Part II

- Session I – Climate Change and Challenges to Ecological and Economic Sustainability
- Session II – Envisioning New Approaches to Managing Great Deltas, Great Rivers, and Great Lakes
- Session III – Connecting People and the Ecosystems That Support Them
- Session IV – “The First Rule of Intelligent Tinkering Is To Save All the Parts”
- Session V – Large Lakes, Deltas, and Transboundary Partnerships: Fostering Science, Cooperation, and Sound Management

### 2:50 PM – 3:20 PM

#### Refreshment Break and Poster Session

### 3:20 PM – 5:00 PM

#### Continuation of Concurrent Technical Sessions – Part II

### 6:15 PM

**Networking Dinner, Red Orchid Restaurant** – Meet in Lobby of Angkor Century Hotel or Apsara Holiday Hotel





# DRAGON Asia Summit

WEDNESDAY

JUNE 24, 2009

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## *Day Three: Experiencing*

**6:00 AM**

**Field Trip and Briefings – Lake Tonle Sap**

*Meet in Lobby of Angkor Century Hotel or Apsara Holiday Hotel at 5:45 AM (Dress for heat and field experience)*

Lake Tonle Sap has great ecological importance to the Lower Mekong fisheries and aquatic communities, is one of the most productive systems in the world, and is one of the world's most unique examples of natural flood control. During the monsoon season, heavy rains increase the flow of the Mekong River. The Tonle Sap River, one of the Mekong's tributaries, reverses flow during the flood season and expands Lake Tonle Sap from about 3,000 km<sup>2</sup> to more than 13,000 km<sup>2</sup>. This immense input of water is critical to the economy and food security of the area, primarily its fisheries and rice fields that feed and support many of Cambodia's 14 million people. The large flood plain around Lake Tonle Sap is a crucial nursery habitat for the fisheries of the Lower Mekong Basin. A single hectare can produce as much as 230 kg of fish a year, making it the world's most productive inland fishery and accounting for about two-thirds of Cambodia's total inland fisheries catch each year. Because of this productivity, Cambodia depends on inland fisheries more than any other country in the world.

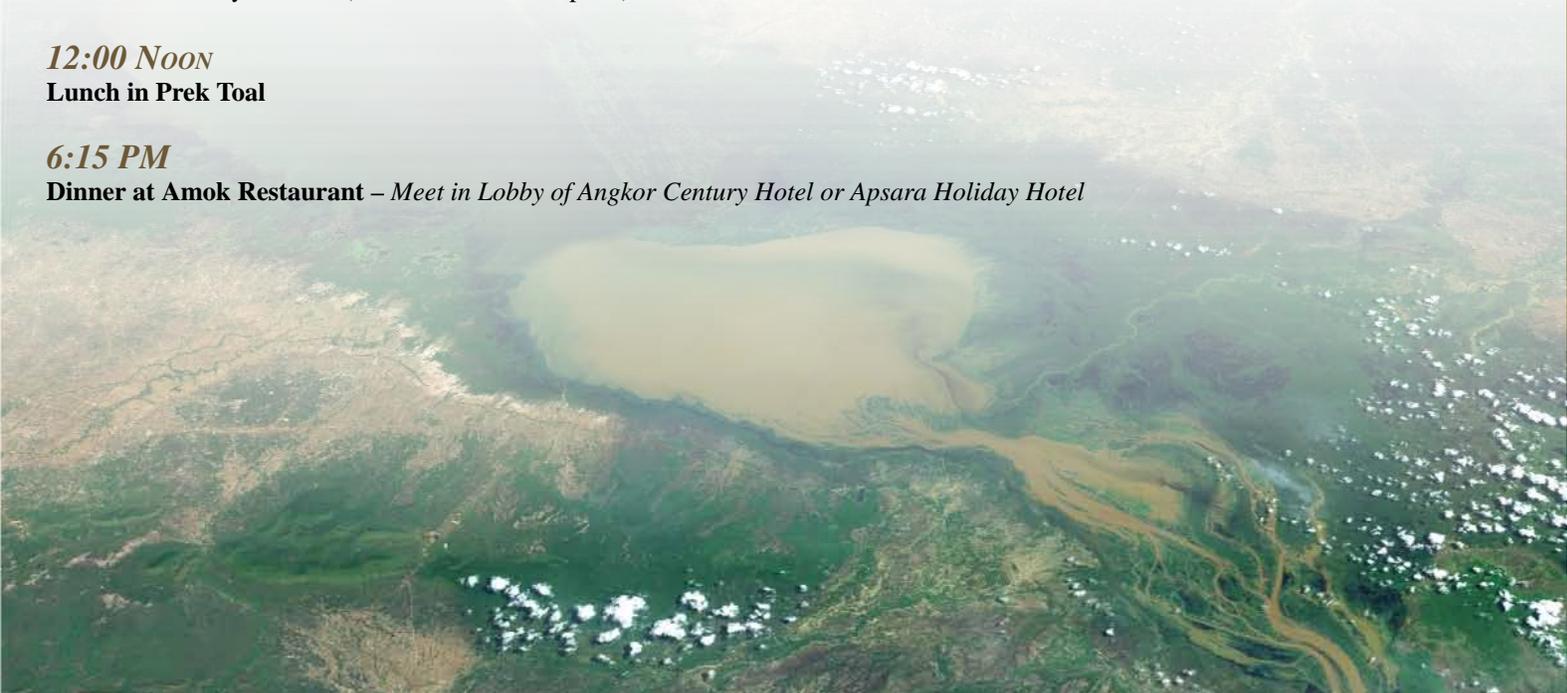
Tour conducted by Osmose ([www.osmosetonlesap.net](http://www.osmosetonlesap.net))

**12:00 Noon**

**Lunch in Prek Toal**

**6:15 PM**

**Dinner at Amok Restaurant – Meet in Lobby of Angkor Century Hotel or Apsara Holiday Hotel**





# DRAGON Asia Summit

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THURSDAY

JUNE 25, 2009

## Day Four: Visioning

**8:00 AM – 10:00 AM**

### Plenary Visioning Addresses

Wetlands of the Lower Mekong Basin: What They Are and What Threatens Them

#### Tran Triet

Dean, Faculty of Biology, Vietnam National University, and  
Director, Southeast Asia Program, International Crane Foundation

#### Sansanee Choowaew

Professor, Mahidol University

Adaptability of Agricultural Production at the Mekong Delta to  
Climate Change and the Function of Wetland Restoration

#### Duong Van Ni

Director, Hoa An Field Station, Can Tho University

Delta Science for a Changing Climate

#### Virginia Burkett

Chief Scientist, Global Change Research, U.S. Geological Survey

World Estuary Alliance: An International Program Emphasizing  
the Potential and Benefits of “Natural Systems” in Sustainable  
Delta and Estuary Development

#### Xander de Bruine

On behalf of World Wide Fund for Nature

Ecological Connections Between the Mekong Mainstream, Tonle  
Sap Great Lake, and Mekong Delta

#### Eric Baran

Research Scientist, The WorldFish Center

#### Chheng Phen

Deputy Head of Biology, Inland Fisheries Research and  
Development Institute

Wetlands and Ramsar Convention on Wetlands

#### Richard Lowerre

President, Caddo Lake Institute, Inc.

**10:00 AM – 10:30 AM**

### Refreshment Break

*(Session facilitators and recorders, meet at DRAGON  
information desk.)*

**10:30 AM – 12:00 NOON**

### Concurrent Visioning Sessions – Part I: What Are the Most Important Issues/Threats?

Roundtable visioning discussions involving multisector perspectives will create ideas and approaches for next steps in developing the critical role of science in managing large, complex delta, river, and lake ecosystems for future generations.

In Part I, participants will address the following questions in each session: (1) What are the top three issues or environmental threats? (2) What is being done now or has been done in the past to address these issues that worked or did not work? (3) What are important sources of information or data that can address these issues?

- Session I – Climate Change and Challenges to Ecological and Economic Sustainability
- Session II – Envisioning New Approaches to Managing Great Deltas, Great Rivers, and Great Lakes
- Session III – Connecting People and the Ecosystems That Support Them

**12:00 NOON – 1:00 PM**

### Buffet Lunch

**1:00 PM – 2:30 PM**

### Concurrent Visioning Sessions – Part II: What Might We Do About These Issues/Threats?

In Part II participants will use information from Part I to write a Strategic Vision. The vision will identify where future efforts will likely have the greatest impact to inform future development and management strategies for these ecosystems in the context of climate change, expanding development, and societal change.

Participants will consider the following questions for each session: (1) What is the vision for each theme, that is, what do we want to see accomplished in 5 years? (2) What are the next steps to achieving that vision? (3) What are the best ways to accomplish those steps?

- Session I – Climate Change and Challenges to Ecological and Economic Sustainability
- Session II – Envisioning New Approaches to Managing Great Deltas, Great Rivers, and Great Lakes
- Session III – Connecting People and the Ecosystems That Support Them

**2:30 PM – 3:00 PM**

### Refreshment Break

**3:00 PM – 4:30 PM**

### Plenary Visioning Session – Synthesis Reports and Panel Discussion

#### Hassan Virji, Panel Chair

Director, START, International START Secretariat

**4:30 PM**

### Adjourn Summit

**6:00 PM**

### Closing Reception –

Horizon Pub Terrace, Angkor Century Hotel

**7:00 PM**

### Farewell Dinner –

Grand View Terrace, Angkor Century Hotel

## Science Networking Schedule

<u>Date</u>	<u>Time</u>	<u>Event</u>	<u>Location</u>	<u>Note</u>
Monday, June 22	9:45 AM	Refreshment Break	Orchid and Asian Conner Rooms	
	12:00 Noon	Buffet Lunch	Grand View Coffee House	
	6:00 PM	Reception	Pool Terrace	Casual Attire
	7:00PM	Welcome Dinner	Pool Terrace	Casual Attire
Tuesday, June 23	10:30 AM	Refreshment Break	Ball Room Foyer	
	12:40 PM	Buffet Lunch	Grand View Coffee House	
	2:50 PM	Refreshment Break	Orchid Foyer, Rendezvous, Asian Conner, and Ball Rooms	
	6:15 PM	Dinner	Red Orchid Restaurant (Siem Reap Town)	Casual Attire
Wednesday, June 24	12:00 Noon	Lunch	Prek Toal – Tonle Sap Lake	Field Attire
	6:15 PM	Dinner	Amok Restaurant (Siem Reap Town)	Casual Attire
Thursday, June 25	10:00 AM	Refreshment Break	Ball Room Foyer	
	12:00 Noon	Buffet Lunch	Grand View Coffee House	
	2:30 PM	Refreshment Break	Orchid Foyer, Rendezvous, Asian Conner, and Ball Rooms	
	6:00 PM	Reception	Horizon Pub Terrace	
	7:00 PM	Farewell Dinner	Grand View Terrace	Casual Attire



Relative vulnerability of coastal deltas as indicated by estimated population potentially displaced by current sea-level trends to 2050 (Extreme (red) = more than 1 million; high (gold) = 50,000-1 million; medium (pink) = 5,000-50,000). (Source: Intergovernmental Panel on Climate Change 2007)

## Conference Information at a Glance

**Registration:** Upon arrival, afternoon of June 21 until June 22, 7 AM to 2 PM in lobby of Angkor Century Hotel.

**Meals:** Lunch and dinner are provided for all registered conference participants. Breakfasts are available at the Angkor Century and the Apsara Holiday hotels for their guests.

**Attire:** Business attire suggested for meetings; resort casual for outdoor receptions and meals; field clothes for field trip.

### Conference at a Glance

*(All activities at Angkor Century Hotel except where otherwise noted.)*

#### **MONDAY, JUNE 22, 2009**

- 8:00 AM Short Course Group I  
Short Course Group II
- 10:00 AM Short Course Group I  
Short Course Group II
- 2:00 PM Opening Keynote Addresses – Session I
- 3:00 PM Opening Session II
- 3:45 PM Education Session
- 4:30 PM Depart to Kok Dong Primary School
- 4:45 PM Arrive Kok Dong Primary School
- 5:20 PM Return to Hotel
- 6:00 PM Poolside Opening Reception
- 7:00 PM Welcome Dinner and Program

- 6:15 PM Dinner – Amok Restaurant  
*Meet in lobby of Angkor Century Hotel  
or Apsara Holiday Hotel*

#### **THURSDAY, JUNE 25, 2009**

- 8:00 AM Plenary Visioning Addresses
- 10:30 AM Concurrent Visioning Sessions – I
- 1:00 PM Concurrent Visioning Sessions – II
- 3:00 PM Plenary Visioning Session – Synthesis  
Reports and Panel Discussion
- 6:00 PM Closing Reception
- 7:00 PM Farewell Dinner

#### **TUESDAY, JUNE 23, 2009**

- 8:00 AM Technical Plenary Addresses
- 11:00 AM Concurrent Technical Sessions – I
- 1:30 PM Concurrent Technical Sessions – II
- 6:15 PM Dinner – Red Orchid Restaurant  
*Meet in lobby of Angkor Century Hotel  
or Apsara Holiday Hotel*

#### **WEDNESDAY, JUNE 24, 2009**

- 5:45 AM *Meet in lobby of Angkor Century Hotel  
or Apsara Holiday Hotel*
- 6:00 AM Lake Tonle Sap Field Trip

