INTRODUCTION TO TAIWAN AND ENVIRONMENTAL EDUCATION LEARNING PROJECT IN THE US

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OUTLINE

- Taiwan
- Taiwan’s forests
- My work in Taiwan
- My project in the WFI
WHERE IS TAIWAN?

http://yuhi.idv.tw/2008/12/25/calendar/
PROFILE OF TAIWAN

- **Area**: 36,000 sq km (13,924 sq mi) (1/7 the size of Oregon)
- **Population**: 23 million (6 times the population of Oregon)
  - 80% resides on the west side plain
- **Capital**: Taipei city
- **Language**: Mandarin/Taiwanese/Hakka
Geographic Characteristics

- Young island
- Located in active and intense plate tectonic movement area
- Frequent and powerful earthquakes
- Seasonal typhoons with torrential rainfall
- Temperature >75°F
- Humidity 80%
- Rainfall 2,500 mm
  (Portland: 950 mm)
TOPOGRAPHIC CHARACTERISTICS

- Mountains over 3,000 m (9,842 ft) have 293 peaks
- Highest mountain is Yushan at 3,952 m (12,966 ft) on the middle west side of island

http://www.ysnp.gov.tw/album/photo_list.asp
Tropic of Cancer

Chia-I

Hual-lien

http://hot-spring.chna.edu.tw/hot_view.aspx
**Biological Features**

- Highly complex diversity
- Mammals 100 species
- Birds 456 species
- Reptiles 98 species
- Fish 2,869 species
- Plants 5,738 species
THE VERTICAL ZONATION OF FOREST TYPES IN TAIWAN
FOREST TYPES IN TAIWAN

- Conifer: 20.86%
- Conifer-hardwood mixed forest: 18.61%
- Bamboo: 7.24%
- Hardwood: 53.29%
Top 5 Broadleaf Trees

Taiwan Zelkova

Formosan Michelia

Taiwan Sasafras

Camphor Tree

Stout Camphor Tree
TOP 5 CONIFEROUS TREES

- Taiwania
- China fir
- Taiwan red cypress
- Taiwan incense cedar
- Taiwan yellow cypress
Forestland Ownership

- National forests are governed by Taiwan Forest Bureau (TFB) 74%
- Aboriginal reserves forests 9%
- Private forestland 9%
- Other governmental agencies are Taiwan Forest Research Institute, Universities, and Veterans Affairs Commission 7%
- Local governmental forests 1%
No Logging in Taiwan
FOREST PROTECTION LAWS

Conservation Concept

Integrated Management Concept

Sustainable Management Concept

1932 Forestry Act

1972 National Park Law

1982 Cultural Heritage Preservation Act

1989 Wildlife Conservation Law

1990 Prohibit cutting in natural forest
NATURAL FORESTS MANAGEMENT

- 72% of Taiwan forests - 1,512,000 ha (3,734,640 acres)
- Biodiversity conservation, and ecological integrity maintenance

http://econgis.forest.gov.tw/PDF/agriculture
PLANTATION MANAGEMENT

- 20% of Taiwan forests - 422,600 ha (1,043,822 acres)
- Wood productivity enhancement & sustainability maintenance for lumber resources, carbon offsets, water and soil conservation, etc.

http://econgis.forest.gov.tw/PDF/agriculture
MY PROFESSION AND EDUCATION

- Botanical Garden Division of Taiwan Forestry Research Institute, Council of Agriculture
- Nature Education laboratory
- Undergraduate Degree in Forestry
- Masters Degree in Environmental Education
TAIPEI BOTANICAL GARDEN

- Located in the South West of Taipei city
- Area: 8 ha (19.76 acres)
- Japanese began the garden/nursery in 1896
- Contains over 2,000 plants species
- Mission: Research/Conservation/Education/Recreation
- Visitors: over 1 million per year
- Interpretative or E.E. programs attendance: 30,000 per year

http://mypaper.pchome.com.tw/
MY WORK IN TAIWAN

- Nature education workshops
  - Basic program - Having fun learning
  - Advanced program - Investigative skills
  - Over 2,000 people (2007-2009)
- Program design and research
- Interpretative programs
  - Weekend activities
  - Signage design
  - Publishing
**Weekend Activities**

- Different subject every year, different theme every month.
  - 2009- Biodiversity Conservation
  - 2010- The Wonderland of Colorful Plants
- Theme study sheet
- Volunteers
- Interpretation, hands-on activities, science exploration and games
SIGNAGE DESIGN AND PUBLISHING
SIGNAGE IN TAIPEI BOTANICAL GARDEN
My Project in WFI

- Environmental Education Methods and Programs in the US
  - Environmental Education Programs
  - Interpretation Programs
  - Interpretive signage design
WHAT DIFFERENT BETWEEN US AND TAIWAN?

- 1970- U.S. Environmental Education Act
- 2010- Taiwan Environmental Education Act
  - Environmental Education became an important issue for Grade 1-9 Curriculum in 2008.
  - The first Environmental Education graduate school was set up in 1993.

40 year Gap
WHAT I HAVE LEARNED?

- E.E. and Interpretation Publications
- Cooperation
- Technique
- Fee and Increased Professionalization
- Consumer Driven
- Interpretative Signage
E. E AND INTERPRETATION PUBLICATIONS

- Environment-based Education
- Interpretation of Cultural and Natural History
- Outdoor Education
- Science and Nature Kits
- Science and Nature Games
- Science and Nature Displays
- Early Childhood Learning
- ...

http://www.naaee.org/
COOPERATION IS IMPORTANT

- Project Learning Tree
- Rediscovery Forest Education Programs
- Cascade StreamWatch
- Summer Camps

http://www.plt.org/
Technique is Different

Freedom
Originality
FEE AND INCREASED PROFESSIONALIZATION

- Pay fee
- Value
- Quality
CONSUMER DRIVEN

- Beforehand investigate
- Monthly questionnaire
- Visitor experience coordinator
INTERPRETATIVE SIGNAGE DESIGN - OUTDOOR

Trapezoid

Low Place

Big

Symbol

Children's Garden
INTERPRETATIVE SIGNAGE DESIGN - INDOOR

Interaction

Real things

Simple

Strong material

Rest area
CONCLUSION AND RECOMMENDATIONS

- Develop the partnership - ex. Chinese Society of Environmental Education, Forestry Bureau, schools
- Develop more publishing - try to cooperate with Chinese Society of Environmental Education
- Respect the visitor experience - survey before designing programs and Interpretative signage
- Add more hands-on activities - give more freedom and originality to the participators.
WE ARE WAITING FOR YOU TO VISIT US

THANKS
Nature Education Workshops

- **Basic program - Having fun learning**
  - Pond dipping
  - Grasslands exploration
  - Trap set up
  - Tranquil observation
  - Risk assessment
  - Ecosystem games

- **Advanced program - Investigative skills**
  - Forest investigation
  - Pond dipping - water quality instruments
  - Mouse cage trap set up
  - Tranquil observation
  - Accident Response (First Aid)
  - Ecosystem games