

9th INTECOL: International Wetlands Conference

Monday, June 4, 2012						
1:30 - 3:00	Concurrent Sessions					
	13	14	15	16	17	18
Location	Grand Sierra Ballroom B	Grand Sierra Ballroom C	Antigua 1&2	Antigua 3&4	Bonaire 1&2	Bonaire 3&4
	2011 National Wetland Condition Assessment (Part 2 of 3)	Wetlands Science and Oil Spills - Remediation, Damage Assessment, Restoration (Part 2 of 2)	Novel Ecosystems: Ecosystem Restoration and Management (Part 2 of 3)	Organic Soils	Trace Metals	Mississippi River Delta: Delta Deterioration and the Pathway Forward
Moderator	Kelly Chinnners Reiss	Don Deis	Wiley Kitchens	Niko Roszkopf	Rick Black	Alisha Renfro
1:30	Session Overview	Session Overview	Session Overview	Session Overview	Session Overview	Session Overview
1:40	Christina Hargiss The North Dakota Intensification of the NWCA: An Endeavor in Collaboration	Scott Zengel Deepwater Horizon Oil Spill: Salt Marsh Treatment Testing and Monitoring, Northern Barataria Bay, Louisiana	Joel Trexler Does the Everglades still exist?	Niko Roszkopf Soil Physical Properties of Organic Soils in Germany and their Relevance for the Climate Reporting	David Krabbenhoft Methylmercury Production in Everglades National Park: Biogeochemical Drivers and Implications for Restoration	Brady Couvillon Land Area Change in Coastal Louisiana 1932-2010
2:00	Mary Boyd Florida Participation in the National Wetland Condition Assessment	Marla Steinhoff Coastal Wetland Natural Resource Damage Assessment Plan for the Deepwater Horizon Oil Spill	Wiley Kitchens Refugia in a Novel Ecosystem: Everglades Snail Kite in Florida	Dongqi Wang Methane Emission from Estuarine Wetlands and the Effect of Wetland Plant	Joerg Schaller Metal/ Metalloid Accumulation/ Remobilization During Aquatic Litter Decomposition in Freshwater	Alexander Kolker A New Subsidence Curve for Mississippi River Delta Tide Gauges and its Implications for Coastal Restoration
2:20	Virginia Baker North Carolina National Wetland Conditional Assessment Site Descriptions, Rapid Assessment Results, and Method Evaluation	Brittany Bernik Salt Marsh Restoration Following an Oil Spill: Ecosystem Consequences of Genetic Variation	Peter Frederick Effects of Novel Water Regimes, Invasive Predators, and Contaminants on Population Dynamics of Wading Birds (Ciconiiformes) in the Everglades of Florida,	Holger Fell Mapping Organic Soils in Germany in the Frame of Climate Reporting	Gintautas Zavadzkas Demonstration Project for Mercury Abatement and Habitat Enhancement in the Miccosukee Tribe of Indians of Florida	Aaron Bass Meeting the Challenge of Barrier Island Restoration: An Overview of the LCA Terrebonne Basin Barrier Shoreline Restoration Planning Process
2:40	Kelly Chinnners Reiss Florida's Use of Supplemental NWCA Funds to Inform Water Quality Standards Development	Chris Cormack Early Results and Guidance from a Coastal Habitat Restoration Project Twenty Years after the 1991 Gulf War Oil Spill	Sue Galatowitsch The Potential Effect of the Novel Ecosystem Concept on Wetland Restoration Planning and Evaluation	Maria Hernandez Methane and Nitrous Oxide Emissions in Freshwater Swamps and Marshes in Southeastern Mexico	Briam Bergamaschi Tidal Flux of Dissolved Organic Carbon, Total Mercury, and Methylmercury from Shark River Estuary, Everglades National Park, USA	Angelina Freeman Integrating Science, Policy, and Stakeholder Outreach to Accelerate Restoration
3:00 - 3:30	Break (Caribbean Ballroom)					

Monday, June 4, 2012						
1:30 -3:00	Concurrent Sessions					
	19	20	21	22	23	24
Location	Bonaire 5&6	Bonaire 7&8	Curacao 1&2	Curacao 3&4	Curacao 5&6	Curacao 7&8
	Olentangy River Wetland Research Park: Investigating Wetland Ecosystem Services at Multiple Landscape Scales (Part 2 of 3)	Interrelationships Among Hydrological, Biodiversity and Land Use Features of the Pantanal (Brazil) and Everglades (Part 2 of 3)	Adaptive Management Water, Wetlands, and Watersheds (AMw3) the Africa Experience (Part 2 of 2)	The Ramsar Convention and SWS - Linking Science to International Policy (Part 2 of 2)	Patterns and Drivers of Peatland Carbon Storage	Scientific Evaluation of Wetland Restoration (Part 1 of 2)
Moderator	Bill Mitsch	Paulo Teixeira de Sousa	Mark Brown	Robert McInnes	Tiffany Troxler and Brian Benscoter	Nicholas Aumen
1:30	Session Overview	Session Overview	Session Overview	Session Overview	Session Overview	Session Overview
1:40	Ulo Mander The Regulation of Greenhouse Gas Fluxes by Wetlands at Landscape Level	Elise Pearlstine Conceptual Model of Human and Natural Systems Interactions in the Agricultural and Ranching Areas in the Everglades and Pantanal	Michael Murray-Hudson Species Distribution Models for Investigating Potential Change in Floodplain Vegetation in Large Flood-Pulsed Tropical Wetlands	Ritesh Kumar Socio-Economic Dimensions to Wetland Science	Kimberly Wickland Carbon Dynamics in High Latitude Peatlands: Effects of Permafrost Thaw	Rebekah Gibble Performance Measures and Adaptive Management of the Florida Everglades
2:00	Bill Mitsch Carbon Export and Budget of Created Wetlands: Importance of Hydrology	Elise Pearlstine Habitat Use by Wildlife in Agricultural and Ranching Areas in the Pantanal and Everglades	Nardisa Pricope Time Series of Inundation in Flood-Pulsed Wetlands from Thermal and Radar Imagery	Royal Gardner The Intersection of Wetland Law, Policy and Science through the Ramsar Convention	Evan Kane Effects of Peatland Drainage on Dissolved Organic Carbon Quality and Quantity	Donatto Surratt Adapting Restoration Performance Measures to the A.R.M. Loxahatchee National Wildlife Refuge
2:20	Blanca Bernal Carbon Sequestration in Tropical Wetlands of Costa Rica	Catia Nunes da Cunha Landscape Ecology Approaches for the Conservation of Pantanal and Everglades Vegetation	Olekai Thakadu Predictors of Knowledge-Sharing Behaviors among Community-Based Natural Resources Organizations in the Okavango Delta, Botswana	George Lukacs Development of a New Framework of Cooperation between Ramsar STRP and SWS	Danielle Watts Hydrologic Modification and Peat Dynamics in the Everglades Ridge-Slough Mosaic	Jimi Sadle Evaluation of Vegetation Data as a Management Tool in Everglades National Park
2:40	Doug Spieles Seedling Recruitment in Variable Hydrologic Regimes	Jennifer Rehage Effects of Seasonal Hydrology on Fish Dynamics in Subtropical Freshwater Wetlands: A Comparative Study Between the Pantanal and the Everglades	Deborah Wojcik Communication, Social Networks, and Perceptions of Water and Wildlife in the Okavango Delta, Botswana	Discussion	Avni Malhotra Relating Self-Regulation with Ecosystem Structure and Function in Northern Peatlands	Evelyn Gaiser Ecosystem-Wide Assessment of Wetland Restoration Using Periphyton-Based Metrics
3:00 - 3:30	Break (Caribbean Ballroom)					

9th INTECOL: International Wetlands Conference

Monday, June 4, 2012						
3:30 -5:00	Concurrent Sessions					
	25	26	27	28	29	30
Location	Grand Sierra Ballroom B	Grand Sierra Ballroom C	Antigua 1&2	Antigua 3&4	Bonaire 1&2	Bonaire 3&4
	2011 National Wetland Condition Assessment (Part 3 of 3)	Hindcasts and Futurecasts Link Hydrology and Ecology in the Coastal Everglades	Novel Ecosystems: Climate Change and Summary (Part 3 of 3)	Tropical Floodplain Ecosystems: Comparative Analyses across Scales and Biomes	An Integrated Approach for Sustainable Use of Wetlands	Indicators for Wetland Monitoring and Assessment
Moderator	Kelly Chinnners Reiss	Catherine Langtimm	Beth Middleton	Len Berry	Wolfgang Junk	Patrick Hunt
3:30	Session Overview	Session Overview	Session Overview	Session Overview	Session Overview	Session Overview
3:40	Erica Hernandez Crosswalk of the Florida Wetland Condition Index within the National Wetland Condition Assessment	Jiang Jiang Predicting and Detecting Consequences of SLR and Storm Surges on Coastal Vegetation Regime Shifts	Beth Middleton Wetland Function and Composition in Novel Swamp Environments	Stephen Hamilton Tropical Floodplain Ecology: Australia Compared to South America	Wolfgang Junk Habitat Classification of Wetlands: a Powerful Tool for Research, Management and Protection	Patrick Hunt Denitrification Enzyme Activity in Mid Atlantic Coastal Plain Wetlands
4:00	Robert Compton Initial Regulatory Applications of the Florida Wetland Condition Index for Vegetation (FWCI-V)	Dennis Krohn Using Modern Hurricane Wind Data to Supplement Hydrodynamic Hindcast and Futurecast Models	Sylvie de Blois Projecting Wetland Plant Species Distribution in a Changing Climate	Jorge Celi Ecological Implications of Erratic Floods in Large River Floodplains of the Andean Amazon Region	Catia Nunes da Cunha Biodiversity and Management of Pantanal Wetlands: an Approach for the Sustainable Use of Brazilian Wetlands	Neal Flanagan Alteration of Riparian Plant Community Structure under Climate Change Scenarios: The Effects of Temperature and Hydroperiod
4:20	Mick Micacchion Improving Success Rates for Compensatory Wetland Mitigation Using Quantifiable Ecological Performance Standards Developed from Level 3 National Wetland Condition Assessment Data	Eric Swain Investigating Hydrologic Scenarios with Climate Change and Ecosystem Process Feedback Using Hindcast and Futurecast Modeling	Martin Wassen Novel Ecosystems: A European Perspective	Tim Jardine Food Webs of the Wet dry Tropics: Multiple Sources of Primary Production Fuel Animal Biomass	Paulo Teixeira de Souza Bioprospection for the Sustainable Use of Wetlands	Taylor Sloey Environmental Constraints and Species Differences in Establishment and Expansion of Three Freshwater Tidal Marsh Plant Species
4:40	Jamie Saxton Lessons Learned from the 2011 National Wetland Condition Assessment	Brad Stith Futurecasting Effects of Sea Level Rise, Climate Change, and Restoration on Individual Species	Arnold van der Valk History and Implications of the Novel Ecosystem Concept	Ronald Zurbrugg Hydrological Drivers of Organic Matter Quality, Mineralization, and Export in a Tropical Dam-Impacted Floodplain System	Michele Sato Science and Culture on Edu-Communication Reinvention	David Mahnken Use of Indicator of Reduction in Soils (IRIS) Tubes as a Performance Measure in Wetland Restoration
5:30 - 6:30	INTECOL & SWS Plenary & Awards (Grand Sierra Ballroom D&E) Master of Ceremonies - Greg Noe, Chair, SWS Awards Committee					
6:30 - 8:30	Welcome Reception and Interactive Poster Presentations Session 1 (Caribbean Ballroom)					

Monday, June 4, 2012						
3:30 - 5:00	Concurrent Sessions					
	31	32	33	34	35	36
Location	Bonaire 5&6	Bonaire 7&8	Curacao 1&2	Curacao 3&4	Curacao 5&6	Curacao 7&8
	Olentangy River Wetland Research Park: Investigating Wetland Ecosystem Services at Multiple Landscape Scales (Part 3 of 3)	Interrelationships Among Hydrological, Biodiversity and Land Use Features of the Pantanal (Brazil) and Everglades (Part 3 of 3)	Integrating Biophysical and Economic Values of Wetlands	Impact of Peatland Fires on Ecosystem Function and Feedbacks to Climate: A Global Perspective (Part 1 of 2)	Invasive Species - Plants	Emerging Science in the Management of Wetlands (Part 2 of 2)
Moderator	Chris Anderson	Catia Nunes da Cunha	Mark Brown	Brian Benscoter & Merritt Turetsky	Jennifer Sagan	Nicholas Aumen
3:30	Session Overview	Session Overview	Session Overview	Session Overview	Session Overview	Session Overview
3:40	Jorge Villa Carbon Fate and Turnover and its Relationships with Phosphorous Retention in a Wetland Mesocosm Experiment	Henry Briceño Biogeochemical Segmentation and Derivation of Protective Numeric Nutrient Criteria for Coastal Everglades waters, South Florida	Mark Brown Integrating Biophysical and Economic Values of Wetlands	Brian Benscoter Fire and Carbon Cycling in Boreal North American Peatlands	Steven Hess Parallel Universes: Remarkable Similarities in the Siege of Invasive Species on Florida and Hawaii	Angelique Bothnak Hydrologic Influences on Water Quality in Blue Cypress Marsh Conservation Area
4:00	Kay Stefanik Vegetation Succession of Created Wetlands in Ohio	Rudolf Jaffe Dissolved Organic Matter in Large, Subtropical, Freshwater Wetlands: A Comparative Study Between the Pantanal, Everglades and Okavango Delta	Damian Adams Integrating Biophysical and Economic Values of Wetlands: Recent Advances in Ecosystem Service Valuation	Merritt Turetsky The Burning of Northern Peatlands: Are we Approaching a Tipping Point?	Brad Mudrzyński Habitats Invaded by European Frogbit (<i>Hydrocharis morsus-ranae</i>) in Lake Ontario Coastal Wetlands	Melissa Martin Understanding the Invasion and Management of <i>Melaleuca quinquenervia</i> from Top-down to Bottom-up
4:20	Li Zhang Wetland Carbon Dynamics in the Eastern Tibetan Plateau	Scott Markwith The Influence of Abiotic and Biotic Seed Dispersal Vectors on Vegetation Structure in the Everglades and Pantanal	Christopher Craft Ecosystem Services of Restored Freshwater Wetlands of the Agricultural Midwest: Measurement and Valuation	Guillermo Rein Smoldering Mega-Fires in Wetlands and Positive Feedbacks to the Climate System	Chunfu Tong Effects of Introduced <i>Spartina alterniflora</i> on the Benthic and Aerial Macroinvertebrates in the Salt Marsh	Todd Osborne Soil Nutrient Storage and Cycling in the Restored Kissimmee River Floodplain
4:40	Discussion	Discussion	Jae-Young Ko Money and Embodied Energy-Based Valuations for Wetlands Utilization of Wastewater Treatment	James Reardon Smoldering Combustion of Organic Soils on the North Carolina Coastal Plain	Drew Kerr Endangered Species Recovery vs. Eradication of an Invasive Ecosystem Engineer: Surprising Story of Invasive <i>Spartina</i> Project	Paul McCormick Water Quality Constrains Hydrologic Management Options for a Northern Everglades Peatland
5:30 - 6:30	INTECOL & SWS Plenary & Awards (Grand Sierra Ballroom D&E) Master of Ceremonies - Greg Noe, Chair, SWS Awards Committee					
6:30 - 8:30	Welcome Reception and Interactive Poster Presentations Session I (Caribbean Ballroom)					

附錄五 2012SWS 我國代表簡報

County-based Governance of Participatory Restoration and Survey for Wetlands in Taiwan

<p>Taiwan has experienced a tremendous increase in human population in over the past fifty years</p> <ul style="list-style-type: none"> growing from 6 million in the 1950s to 23.2 million by 2011. the population density was among the world's second highest at 644 people/km²  <p>ENVIRONMENTAL POLICY AND PLANNING SECTION</p>	<p>County-based Governance of Participatory Restoration and Survey for Wetlands in Taiwan</p> <p>Chia-Hong Wang, Planning Director, Bureau Lee's and Wei-Tai Fong² Construction and Rural Development Branch, Construction and Planning Agency, Ministry of the Interior, Republic of China (Taiwan) * SMS Kelp Chapter, Taiwan Wetland Society</p>  <p>ENVIRONMENTAL POLICY AND PLANNING SECTION</p>
<p>Scarcity of natural resources</p> <ul style="list-style-type: none"> Immense population pressure causes massive urban sprawl cumulative results placed tremendous burdens on the island.  <p>ENVIRONMENTAL POLICY AND PLANNING SECTION</p>	<p>Taiwan</p> <p>Asian Flyway Migration Routes</p>  <p>ENVIRONMENTAL POLICY AND PLANNING SECTION</p>

Utilized from the public domain

- ☑ Forests, water, and soils.
- ☑ Landscape destruction
- ☑ Habitat degradation



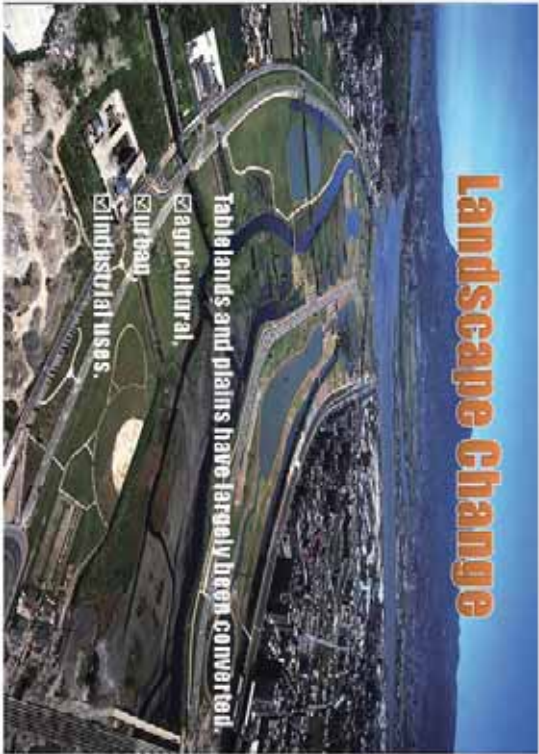
CONSTRUCTION AND LAND REUSE

PHOTO

Landscape Change

Tablelands and plains have largely been converted.

- ☑ urban
- ☑ agricultural
- ☑ industrial uses.



CONSTRUCTION AND LAND REUSE

PHOTO COURTESY TO CHRIS ANDRE RIVER

Vigorous economic activities

• Vigorous economic activities on misappropriated lands have been associated with increased pollution of

- ☑ the air,
- ☑ water,
- ☑ and soils.



CONSTRUCTION AND LAND REUSE

Fragmentation of biomes

- Fragmentation of biomes and habitat degradation has placed pressure on biological diversity.



INTECOL

- Since the 8th INTECOL International Wetland Conference (2008) and COP 15 Copenhagen Climate Summit (2009) have been held from the years of 2008 and 2009 due to climate rapid change, wetlands have been explored their outstanding capabilities to reduce greenhouse gases and provide biodiversity.

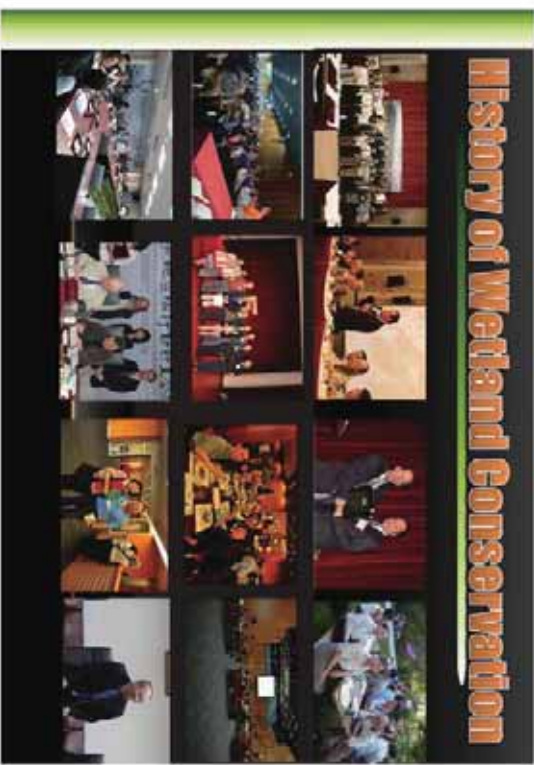


History of Wetland Conservation

- 32 Wetlands of Importance have been designated
- The branch proceeded to develop "Wetland Conservation Act (draft)"
- Promote wetland biodiversity monitoring system of standard operating procedures (SOP)
- Build national survey database for the importance of wetlands
- Join the Society of Wetland Scientists (SWS)
- Organize the "First SMS Asia Chapter's 2008 Asian Wetland Convention"
- Will promote organize "SWS Annual Meeting" in 2015



History of Wetland Conservation



Construction and Planning (Taiwan CPA) Rule

- According to CPA's Rule, the Urban and Rural Development Branch (The Branch), CPA has developed the guideline for three objectives, such as:
 - wise uses of wetlands resources
 - construction of entire national ecological network of important wetlands
 - enforcement of international exchanges to promote wetland conservation.



CONSTRUCTION AND PLANNING BRANCH

RECRUIT

History of Wetland Conservation

Wetland conservation is now part of the overall planning. The Urban and Rural Development Branch (The Branch) has developed a series of guidelines for wetland conservation. The Branch has also established a series of guidelines for wetland conservation. The Branch has also established a series of guidelines for wetland conservation. The Branch has also established a series of guidelines for wetland conservation.



Taijiang National Park Has been designated during 2009.

CONSTRUCTION AND PLANNING BRANCH

As the number of protected areas in Taiwan, Taipei City, New Taipei City, Taoyuan County, Keelung City, and Yancheng County. The government is committed to the conservation of wetlands. The government is committed to the conservation of wetlands. The government is committed to the conservation of wetlands. The government is committed to the conservation of wetlands.



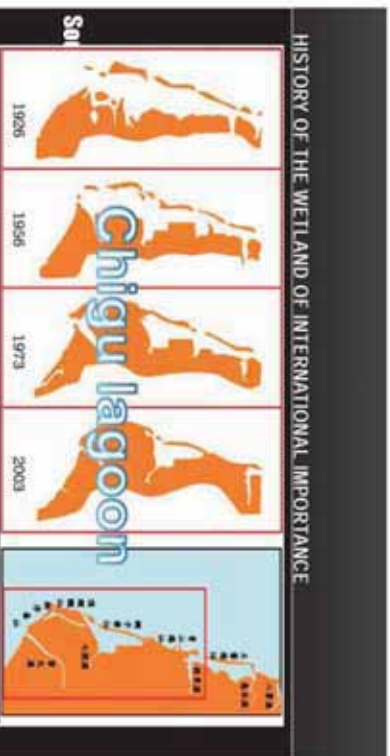
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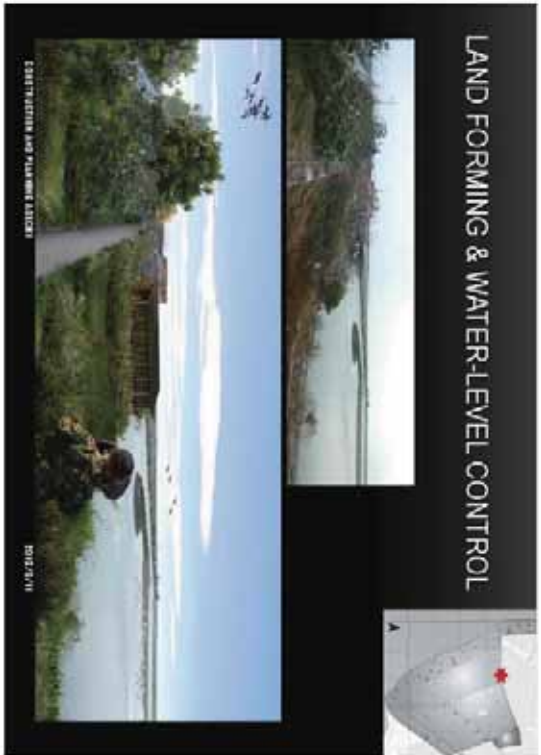
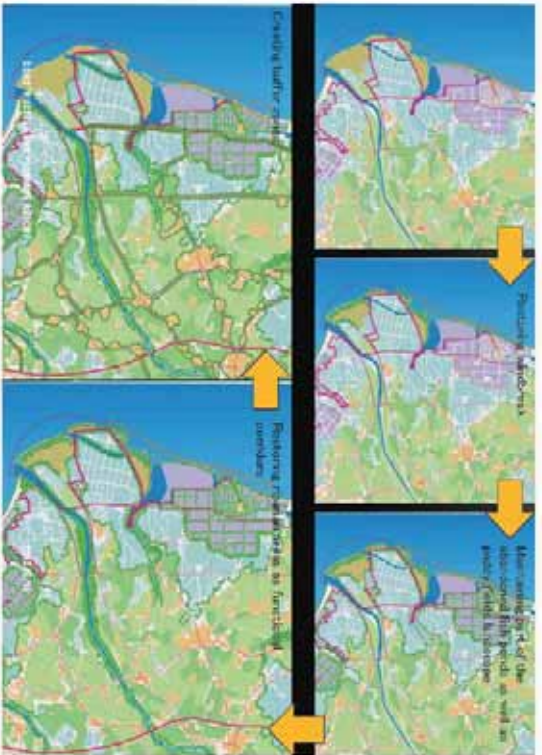
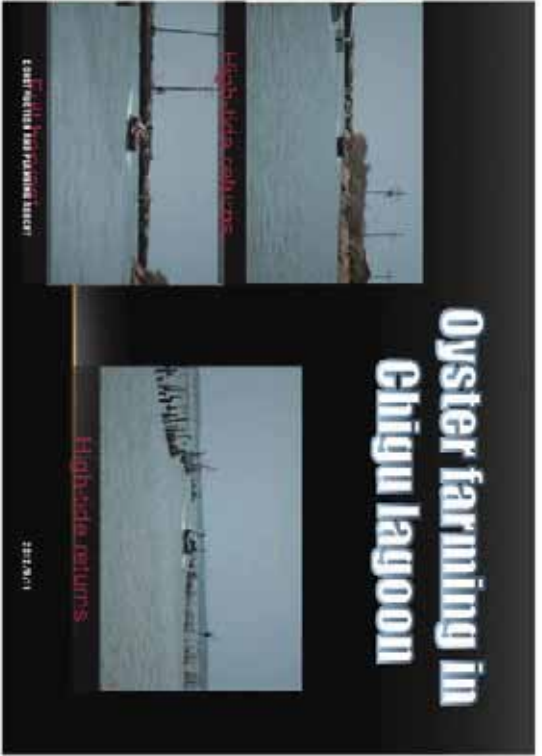
RECRUIT



Source: Fang, 2009.
Ancient Maps in Tainan Coastal Wetland
 History of the Wetland of International Importance



Source: Fang, 2009.
History of the Wetland of International Importance

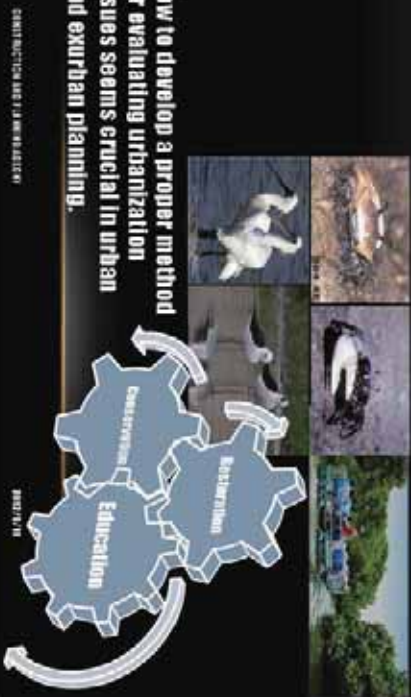


HEATHLAND RESTORATION



Planning Process Is the Purpose

How to develop a proper method for evaluating urbanization issues seems crucial in urban and exurban planning.



Supported from subsidies, local governments, NGOs, communities, and research institutions acted as the main units who have involved all activities, such as: joint-patrol organization, ecological survey, landscape restoration, etc.

CREATING WIN-WIN FOR?

CONTRACTOR AND FARMING RESTORER

JACOB NI



Thanks for your attention

Patch Demands



附錄六 2012SWS 大會提供濕地參訪行程簡介

1. 卡納維拉爾角濕地(Cape Canaveral Wetlands)

領隊: Mark Clark (UF/IFAS Soil & Water Science Dept.)

Mark Clark 將帶領參訪者來到梅里特島國家野生動物保護區 (Merritt Island National Wildlife Refuge) 的遊客服務中心，了解當地歷史並參觀一些正在進行的濕地復育工作。接著來到黑點野生動物區(Black Point Wildlife Drive)，參訪淡水沼澤、鹽沼和紅樹林濕地，以及當地孕育的許多珍貴鳥類及爬蟲類物種。下午到卡納維拉爾角國家海濱(Cape Canaveral National seashore)，這裡正進行著蓄水恢復和堤防整平工程，並可看到離岸沙洲及大西洋沿岸海灘，有機會還能欣賞到當地瀕臨絕種的稀有鳥類--林鳥(Scrub Jay)。



2. Emeraldal 沼澤恢復(Emeralda Marsh Restoration)

領隊: Walt Godwin (聖約翰河水利管理處 St. Johns River Water Management District)

位於佛羅里達州利斯堡西部佔地遼闊的愛美雷達沼澤保護區 (Emeralda Marsh Conservation Area)，是由農田和養牛牧場復育轉型而成的濕地和水生生物棲息地，因濕地的成功復育，排放入鄰近格里芬湖(Lake Griffin)的營養物質減少了約 80%，這使格里芬湖(Lake Griffin)的水質獲得顯著改善，重建了魚類和野生動物的棲息地。參訪者可以看到當地經過原農田所在地，今由石灰岩架高而形成堤防，最近新建了一條連結原農牧場場址和格里芬湖(Lake Griffin)的支流，此為格里芬湖(Lake Griffin)最

大條的支流。接著將參觀 Emeralda 西區的明礬淨水系統，因目前原農場殘留的營養物質含量仍高於格里芬湖(Lake Griffin)的承載量，因此利用硫酸鋁控制污水排放的磷濃度。接著帶大家參觀正在進行濕地復育的農田，及當地孕育的大量野生動物，建議參加者攜帶望遠鏡及防雨用具。最後將參訪 Emeralda 東區島上的”P”復育區及明礬淨水系統，此系統淨化了廣達 1120 公頃的濕地水質。



3.佛羅里達州溫泉之旅-瞻博溫泉(Juniper Springs)和銀幽谷溫泉(Silver Glen Springs)

領隊: Sonny Hall (SJRWMD)

Ima Bujak (SJRWMD)

我們將帶著團員穿梭於溫泉遊樂區中蜿蜒的小徑。瞻博溫泉(Juniper Springs)是個中等規模橢圓形的溫泉，東西約 120 英尺南北約 90 英尺寬，一部分的湖底充滿石灰岩洞穴及滾燙的沙，另一部分則覆滿水草及細沙，湛藍的湖水由石灰岩形成的天然屏障環繞著，一座古老的磨麵坊坐落於湖水的東邊。此湖為瞻博河(Juniper Creek)的源頭，河水向北穿過瞻博草原(Juniper Prairie Wilderness)，蜿蜒 10 多公里匯流至喬治湖(Lake George)。

銀幽谷溫泉(Silver Glen Springs)為大型規模半圓形的溫泉，東西約 200 英尺南北約 175 英尺寬，強勁滾燙的湖水自湖底的天然岩穴洞口洩出，Natural Well 為西南方直徑約 14 英尺深約 40 英尺的一垂直洞口，東方則有一深約 18 英尺的圓錐形洞穴，湖水

底部佈滿石灰岩洞穴及水草，許多大型淡水及鹹水魚優游其間。一條寬達 200 英尺的支流，向東蜿蜒 0.75 公里至喬治湖(Lake George)。



4. 歷史及人居之旅

聖誕堡歷史公園(Fort Christmas Historical Park)

和東奧蘭多濕地(Orlando Easterly Wetlands)

領隊: Mark Sees (City of Orlando)

聖誕堡公園(Fort Christmas Park)中複製了完整尺寸的堡壘，園中恢復了七座歷史家園，以完整呈現東奧蘭治縣(East Orange County)的'Cracker' 建築風格，這些家園保留了 1870 至 1930 年代拓荒者的生活型態。來到東奧蘭多濕地(Orlando Easterly Wetlands)的遊客將參觀廣達 1,650 英畝的濕地淨水處理系統。參觀者將了解濕地如何排除廢水中過量的氮和磷，每天淨化的水量高達 1500 萬加侖，同時，濕地也為土著、瀕臨絕種的珍貴野生物種提供庇蔭的家園。



5.

奧蘭多

濕地復育 Orlando Treatment Wetlands

東奧蘭多廢水處理公司 Orange Co. Eastern Water

Reclamation Facility

格林伍德城區濕地 Greenwood Urban Wetlands

東奧蘭多濕地 Orlando Easterly Wetlands

領隊: Mark Sees (City of Orlando)

此團將帶領團員參訪佛羅里達州中部的兩大人工濕地。

格林伍德城區濕地(Greenwood Urban Wetland)負責處理匯流自奧蘭多市中心的雨水徑流，而東奧蘭多濕地(Orlando Easterly Wetlands)(又名奧蘭多濕地公園 Orlando Wetlands Park)接收了來自鐵橋廢水處理(Iron Bridge Wastewater Reclamation Facility)經三級處理後的廢水，並將淨化的水排放入聖約翰河(St. Johns River)。這兩個系統是人工濕地的好例子，且兩濕地皆已運作了將近二十年，因此也提供了長期濕地管理及維護的優良典範。



6. SJRWMD 阿波普卡湖北岸 (Lake Apopka North Shore) 修復計畫

領隊: Mike Coveney(聖約翰河水利管理處 St. Johns River Water Management District)

自 1985 年來，位於奧蘭多(Orlando)西北方的阿波普卡湖(Lake Apopka)一直是 SJRWMD (聖約翰河水管理區 St. Johns River Water Management District) 的重點修復計畫。北岸原先為一農業用地，然而農業廢水導致原本潔淨的湖水優養化，破壞了生

物多樣性及當地的遊釣事業，因此開始大量收購農地並進行濕地復育計畫。計畫的重點在於 275 公頃湖水的淨化工程，包括恢復當地水文環境、生物多樣性，及人工濕地的維護管理等，而十幾年來的農業發展遺留下來了 2 公尺深的有機質淤泥，含有高濃度的有機氮及磷，因此有機淤泥中農藥殘留的淨化工作也成了首要之務，如今我們可以在成功復育的濕地欣賞到豐富的鳥類及野生動物身影，建議參加者攜帶望遠鏡及防雨用具。



7. 濕地自然保護區復育計畫參訪(Tour Leader: Roney Gutierrez, USDA NRCS Assistant State Conservationist)

參訪者將享受導遊的帶領下，經過一個位於波爾克縣(Polk County)，約 1000 畝大小修復後的濕地景點。這片土地坐落於佛羅里達大沼澤地 (Florida Everglades)，佛羅里達大沼澤地因為擁有許多野生動物，如熊，美洲鶴和禿鷹等等，而成為一個熱門的景點，此外也是世界上最大的修復工程計畫的所在地源頭。美國自然資源保護署(NRCS)與在此地的牧場擁有者其部分牧場土地，簽訂濕地保存計畫(WRP)地役權條約，濕地修復工程計畫於 2006 年完成，這些條約，限制了土地發展也為我們的下一代保存了這些土地。參訪者將熟悉本地的濕地生態系統，也將了解此地恢復工作結構背後的水文原理，除此之外，也將討論濕地管理議題包括使用規定的放牧來控制外來植物，如果時間允許參訪者也會一起檢視在同一地區的草原保存計畫 (GRP) 的景點。



8. 維基瓦(wekiwa)泉源和河流導覽

Tour Leader: Robert Mattson, SJRWMD

位於維基瓦河(Wekiwa River)的上游，除了美麗景觀之外，這個公園提供了一個機會一睹從前蒂姆庫安(Timucuan)印第安人捕魚和狩獵時的中佛羅里達的景象。距離大多數佛羅里達州中部景點，只要一個小時的距離，維基瓦溫泉為遊客提供了一個在自然環境中放鬆、享受野餐或在清涼的泉水游泳的機會。



9. 聖約翰河流域上游 Upper St. Johns River Basin

-牛河 Bull Creek 及 Triple N 牧場 **Tour Leaders: Dianne Hall, SJRWMD, Brett Walker, FFWCC**

參訪者將體驗“真實”的佛羅里達州，將看到各種各樣的棲息地。這些龐大野生動物管理區(Bull Creek = 23,470 ac; Triple N = 15,391 ac)將有機會看到許多佛羅里達的內陸棲息地從沙地、叢林地區、到濕泥炭沼澤和沼澤。在牛河，領導將介紹管理這種規模的水文管理所遇到的挑戰，然後讓參訪者可以進軍到沼澤

(須穿著不怕被弄濕的鞋子)。然後我們將前往地勢較高的地方並聽取有關消防管理和外來植物管理，用於管理不同資源的技術。參訪者將獲得前往佛羅里達棲息地，包括棕櫚草原(Palmetto prairies)、沼澤(Marshes)、硬木沼澤(Hardwood Swamps)等等。接下來導遊會介紹，在這些地區的罕見和有趣植物，包括連帽豬籠草(hooded pitcher plant)、鳳梨(bromeliads)、蝴蝶蘭(butterfly orchids)、茅膏菜(sundews)等等。之後，我們將前往 Triple N 牧場看紅冠啄木鳥(Red-cockaded Woodpecker)的棲息地和佛羅里達魚類及野生動物保育協會(FFWCC)指南所列的物種，你可以看到許多野生動物如沙丘鶴(sandhill crane)，山貓，鹿，火雞和大量其他鳥類，兩棲類，爬行類，昆蟲等等。



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