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A PARTNERSHIP BETWEEN TWO PROTECTED PEATLANDS: GREAT DISMAL SWAMP NATIONAL WILDLIFE REFUGE, VIRGINIA, USA AND SEBANGAU NATIONAL PARK, CENTRAL KALIMANTAN, INDONESIA

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SUMMARY

The designation of two protected areas from opposite ends of the world as sister protected areas, provides many benefits. It allows for the exchange of knowledge and information that may impact ecosystems in both protected areas. It provides inspiration to protected area staff, motivated by the shared challenges and encouragement of their partners around the globe. A sister protected area arrangement is an effective training and capacity building mechanism, especially when exchange visits are sustained over time. It can be used to enhance visitation and environmental education when interpreted in such a way that it links the purpose of a particular protected area to issues of global conservation. Finally, it serves as a reminder that the cause of conservation cannot be advanced by one protected area, or one country, but must be a common effort of all mankind.

Keywords*: peatland, protected area, Sebangau National Park, Great Dismal Swamp, partnership*

INTRODUCTION

The creation and restoration of protected areas is a key tool in the global conservation of peatlands. National parks, wildlife refuges, and other types of conservation areas allow for the permanent protection of high-priority peat resources and the long-term, intensive management required to restore degraded peatlands back to productive ecosystems.

Indonesia and the United States are partnering to improve restoration and management efforts at two protected forested peatlands: Great Dismal Swamp National Wildlife Refuge in Suffolk, VA, USA and Sebangau National Park, Central Kalimantan, Indonesia.

GREAT DISMAL SWAMP NATIONAL WILDLIFE REFUGE

The Great Dismal Swamp National Wildlife Refuge (NWR) is the largest intact remnant of a vast peatland that once covered more than 400,000 ha of southeastern Virginia and northeastern North Carolina. Formal protection of this resource began in 1973 when a local forest production company donated 20,000 ha to The Nature Conservancy. The land was later conveyed to the United States Fish and Wildlife Service to establish the Great Dismal Swamp NWR in 1974. Since its establishment, additional acquisitions have expanded the refuge‘s land area to 45,300 ha (Figure 1).

The soils of Great Dismal Swamp NWR play a critical role in supporting its forested wetland communities. Organic soils predominate and are divided into two taxonomic classes: Typic Medisaprists and Terric Medisaprists. The peat is composed of material from woody plants, has little mineral content, and has been accumulating in the Dismal Swamp for about 8,000 to 9,000 years. Maximum peat depths approach 3m in places but are typically closer to 1.0 – 1.5m in much of the swamp. Partially decomposed layers of logs and stumps are buried in the decomposed organic material.

Within the refuge, construction of 240 km of canals and their attendant spoil bank roads have combined to form the single most significant alteration to the swamp's water regime. The Refuge is currently focused on research and restoration of the hydrologic processes to be managed for the benefit of wildlife and people.

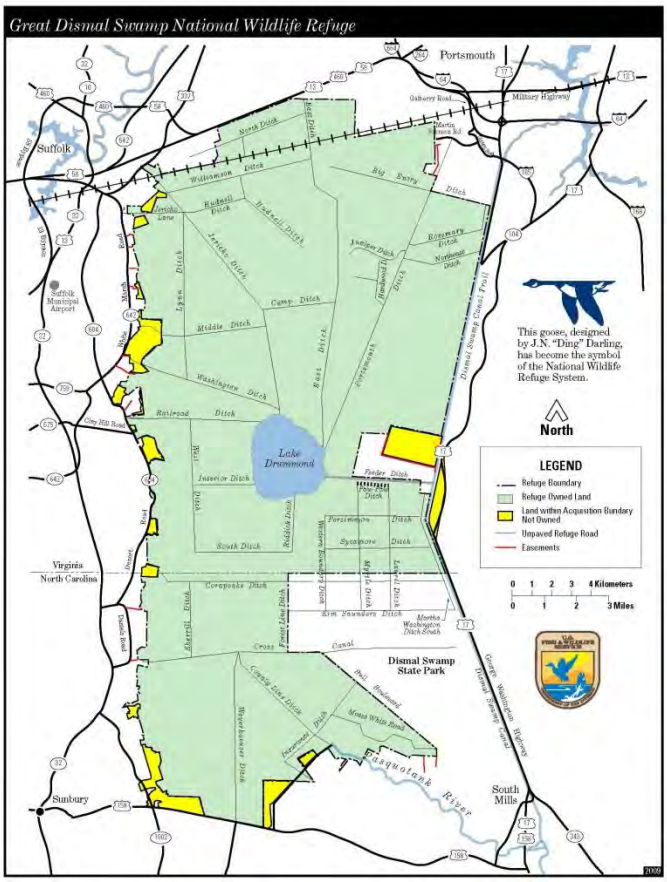

Figure 1: Great Dismal Swamp National Wildlife Refuge, Suffolk, VA USA

SEBANGAU NATIONAL PARK

Sebangau National Park protects 568,700 ha of forested peatland between the Katingan and Sebangau Rivers in the southern portion of Central Kalimantan Province, Indonesia (Figure 2). The park constitutes one of the largest relatively intact tropical peat-swamp forests in Kalimantan and hosts an estimated 6,900 orangutans – the largest orangutan population in any protected area in Indonesia. The park protects an ecosystem characterized by its rich biodiversity including more than 300 plant species, 200 bird species, and 35 species of mammals including the primates: orangutan (*Pongo pygmaeus* sp.), proboscis monkey (*Nasalis larvatus*), and agile gibbon (*Hylobates albibarbis*), as well as a number of diverse fish and reptile species including the estuarine crocodile (*Crocodylus porosus*). This species richness is largely dependent upon the canopy provided by the tropical peat swamp forest and the underlying peat layer which ranges from 1m – 12m in thickness.

Sebangau was designateded a National Park in 2004 following several decades of legal and illegal logging. An extensive network of drainage canals, constructed to support logging activities, continues to drain the underlying peat soils. Since 2004, the Ministry of Environment and Forestry has worked to restore the park through rewetting of the peatland, reforestation, and working with local communities to protect the park's biodiversity.

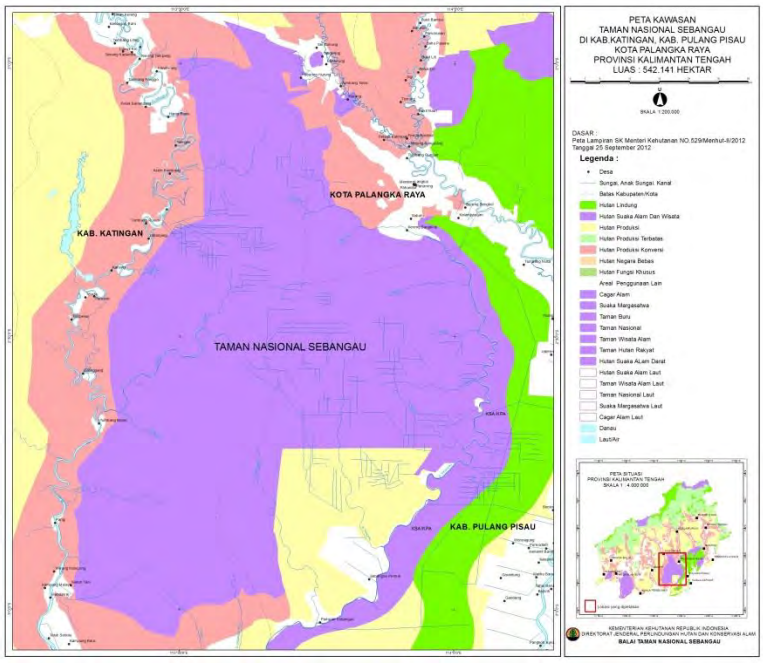

Figure 2: Sebangau National Park, Central Kalimantan, Indonesia

SISTER PROTECTED AREA AGREEMENT

Great Dismal Swamp and Sebangau are uniquely similar protected areas. Both sites protect significant forested peatlands that have been subjected to damaging logging practices. Extensive networks of drainage canals, constructed to facilitate logging, have altered the hydrology of both peatlands and contribute to an increase in ground fire severity and frequency. The staff at Great Dismal Swamp and Sebangau are working closely with non-governmental partners and local universities to develop approaches for restoring hydrologic processes and suppress severe ground fires at their respective protected areas. This work is important to managers at both sites because both are home to high-profile endangered species. Sebangau National Park is a haven for orangutans. Great Dismal Swamp is home to a diverse array of wildlife, including the most dense black bear population in Virginia and several endangered species, such as the red-cockaded woodpecker, northern long-eared bat, and canebrake rattlesnake.

In 2013, the Indonesian government requested assistance from the Unites States Agency for International Development (USAID) to provide support to national parks in Indonesia. This request led to a five year (2013-2018), $1.5 million program to provide government-to-government technical assistance and training to protected area staff in Indonesia: *Strengthening Indonesia's National Parks and Wildlife Protection*. An initial assessment of the Indonesian parks identified priority needs in peatland hydrologic restoration and management.

USAID solicited support from the U.S. Department of Interior, International Technical Assistance Program (ITAP) to partner with Indonesia's Ministry of Environment and Forestry to implement the five-year program. Technical assistance and training will be accomplished through natural resource assessments, training workshops, technical consulting, U.S.-based training internships, and scientific exchanges between DOI experts and Indonesian protected area staff.

The idea for the partnership began to take root in February 2015, when Great Dismal Swamp hydrologist, Fred Wurster, participated in a training and assessment team sent to Sebangau by ITAP. The team trained Sebangau park staff on basic peatland hydrology and hydrological restoration techniques. This workshop included case studies from Great Dismal Swamp and the Everglades National Park as well as exercises in water quality sampling. The team spent a few days in the field with workshop participants to demonstrate field techniques for analyzing soil pits, assessing peat cores, and installing shallow groundwater monitoring wells (Figure 3). In addition, the team took time to visit the village of Habaring Huarung, to learn about the challenges of community development in villages surrounding the park. Engaging these local communities is an essential part of the protected area management strategy at Sebangau.

Figure 3: Great Dismal Swamp Hydrologist, Fred Wurster, instructing on well installation at Sebangau National Park – February 2015 (image: Mark Flora)

In late March of 2015, DOI-ITAP staff invited several Indonesian colleagues to visit the Great Dismal Swamp National Wildlife Refuge (Figure 4). A group of nine staff from two Indonesian National Parks, including Sebangau, and senior officials from the Ministry of Environment and Forestry made the trip to Suffolk, Virginia. The group undertook three days of classroom and field based activities to learn more about Great Dismal Swamp's restoration efforts, which were recently profiled in The Nature Conservancy magazine (http:/www.nature.org/magazine/archives/the-great-dismal-swamp.xml), and earned the 2013 National Environmental Leadership Award for "Refuge of the Year". The Indonesian delegation also studied wetland management techniques at nearby protected peatlands at Alligator River National Wildlife Refuge and Pocosin Lakes National Wildlife Refuge in northeast North Carolina.

Figure 4: Participants at Great Dismal Swamp National Wildlife Refuge - March 2015, Suffolk, Virginia, USA (image: Cindy Lane).

When the managers realized how similar their resources and challenges were, they agreed to pursue a ~~–~~Sister Protected Areas Partnership". The goals of the partnership include:

1. Enhance understanding of and capacity for peatland management.
2. Enhance understanding of hydrological restoration and monitoring activities.
3. Develop and support a wildlife- and hydrological-based nature tourism.
4. Exchange of knowledge and experiences on recovery of endangered species and biodiversity conservation.
5. Organize scientific exchanges that result in improved natural resource management techniques.
6. Enhance capacity for database management.
7. Other programs of mutual interest.

A year of successful cooperation culminated in the signing ceremony in January 2016 in Palangkaraya, Central Kalimantan (Figure 5). This arrangement became the first relationship of its kind between the two countries. Following the signing ceremony, Great Dismal Swamp staff conducted a workshop on Visitor Services, Tourism Planning and Ecotourism.

Figure 5: Chris Lowie (Great Dismal Swamp NWR Manager) and Adib Gunawan (Sebangau National Park Manager) with commemorative plaque during the signing ceremony, Palangkaraya, Indonesia – January 2016 (image: DOI-ITAP collections)

CONCLUSION

To date, accomplishments of the Sister Protected Areas Partnership include, 72 staff trained, three major assessments, and three sister protected area exchanges. For the next five years, the Great Dismal Swamp and Sebangau staff will continue to exchange ideas on hydrologic restoration, peatland management, wildfire prevention, endangered species protection, ecotourism, and community outreach. This bilateral collaboration is expected to strengthen the capacity of both protected areas and will contribute to a broader understanding of peatland management. In addition, the project is expanding in 2016 to protected areas in Aceh and Papua Provinces.