

Human Heritage and Natural Heritage in the Everglades

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Human society and the natural environment of the south Florida Everglades developed simultaneously. From the beginning the human perspective was inherently exploitative. Archaic Indians occupied all the high natural ground but neither farmed nor lived in the Everglades. This culture and succeeding Indian cultures persisted for thousands of years with the population sustainably capped by food supply and availability of high ground. After Spanish contact, Indian society collapsed leading to a 150-year hiatus in human occupation. In the late 1800s for the first time newly immigrated Indians took up residence in the Everglades; European-derived Americans settled high ground and agriculture developed. Within 100 years thereafter, half of the Everglades had been drained and the population of south Florida had reached 6.2 million residents. The overall exploitation of the Everglades' resources during the 20th century reflects the area as a place of transience. Contemporary human relationships with the environment appear to be different in scope but not in fundamentals from cultures that came before. Until the contact period, humans had adapted their culture to sustain communities in balance with the difficult landscape. Today's human population dominates the natural environment, although perhaps only in the short term. It remains to be determined whether cultural views can change quickly enough to secure a new viable carrying capacity.

Keywords: Natural Heritage; Environment; Ecology; Florida; Everglades; Hydrology; Topography; Nature

Cultural and natural heritages of the Everglades have always been inextricably intertwined. History demonstrates that humans have confronted nature in attempting to develop the Everglades and its surrounding areas and these attempts continue today at

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ISSN 1352-7258 (print)/ISSN 1470-3610 (online) © 2007 Taylor & Francis
DOI: 10.1080/13527250701350959

an ever-increasing intensity. This has resulted in a contemporary landscape that differs significantly from what would have occurred without man's presence. South Florida's human community today is defined by its intriguingly chaotic cultural diversity. In this paper, we examine the mutual evolution of local human culture and the Everglades environment, suggesting that the famously intrusive current development trends are continuous with those of previous cultures. We consider the persistent difficulty of establishing a mutually compatible existence of human and natural environment in southern Florida and suggest that the conflict is fuelled by local desires for economic benefit influenced by a sense of impermanency and access to a growing technological ability that appears to favour self-interest and short-term gains in contrast to the wider-world ethic favouring conservation of the environment.

The Natural Heritage of South Florida

The natural heritage of south Florida is of world significance. The Everglades is one of the great wetlands of the world, originally encompassing nearly all the south Florida mainland, located at the south-eastern tip of North America. Historically, the Everglades was a marsh complex of herbaceous vegetation (dominated by razor-sharp sawgrass (*Cladium jamaicensus*)) broken intermittently by tree-covered 'islands', an environment that, around AD 1900, covered over 10,000 km².¹ This Everglades, proper, occupied the slightest of valleys, 100 km long, south of Lake Okeechobee, positioned in the centre of the Florida peninsula, reaching to the ocean along three coasts. Unlike most large tropical wetlands, it lacked rivers except at its fringes. In the rainy season, water flowed southward from the lake over a gradient of 3 cm/km to the sea. Surface water connected directly to subsurface aquifers in such quantity that water emerged under pressure at various points. The remainder of southern Florida was also part of the greater Everglades wetland environment, connected ecologically by seasonal inundation. To the north were deepwater swamps fed by Lake Okeechobee overflow. To the west, a great swamp was dominated by cypress trees (*Taxodium distichum*). To the south, extensive mangrove swamps occurred where freshwater and saltwater mixed within narrow estuaries. To the east and west, a mix of swamps and marshes melded into a narrow rock and sand ridge that lined the Florida coasts. The highest lands were the narrow ridges and islands along the east coast and the islands along the west coast. The extent of dry land varied seasonally with the subtropical rainfall pattern. On average the area received 4 m of rain annually, mostly during the rainy season of May to November. Flooded areas expanded in the rainy season. In the dry season, water depths fell, until by May much of the landscape lacked standing surface water. This environment, together covering 20,000 km², can best be thought of as a sea of shallow fresh, brackish, and saltwater marshes, swamps and bays dotted by intermittent islands, most prominently along the east and west sea coasts. Currently, the remnant core of the Everglades and its adjacent cypress swamps and mangrove swamps have been set aside from development to be used as reservoirs, flood control and water delivery systems, natural parks and reserves. Everglades National Park is perhaps the best known of the dozens of entities that make up this

collection of reserved land. Reserves, though, constitute less than half of the wetland present at the turn of the 20th century.

Human Culture in South Florida through History

Paleo-Indians were first recorded in Florida about 17,000–10,000 years BP, at a time when sea levels were as much as 30 m lower than at present.² The environment of the then much larger Florida peninsula was cool, dry, and windy, an effect of the glaciation of much of the continent, which was only marginally suitable for human occupation. Humans in Florida during this Paleo-Indian period were part of the North American Clovis culture, hunter-gatherers specialising in mega-fauna hunting and gathering who practised a nomadic way of life in a savannah-like environment. They occupied high ground, where the game occurred. In this dry environment, there was no Everglades. Therefore, humans occupied the land that later became south Florida before the Everglades developed.

The Archaic Indian cultures followed the Paleo-Indians. Climate changes, starting about 9,000 BP, brought about significant change to the south Florida environment, reducing the Pleistocene mega-fauna, increasing rainfall, temperatures, diversity of plant and animal life, and sea level.³ During this Early Archaic period, human populations increased in the more benign environment and developed more sophisticated subsistence hunting, trapping, fishing, and gathering, and became less nomadic.⁴ The wetter conditions that caused the transition from the Paleo-Indian hunting culture to the more versatile Archaic culture were interrupted by an extensive dry period lasting from 8,000 to 5,000 BP. Indian populations declined as conditions became harsher. People lived in small family groups near water.

Conditions changed again starting at 5,000 BP, leading to a new cultural tradition, called the Late Archaic period (5,000–2,500 BP). This period saw a wetter environment, a rise in sea level to near current stage, and the development of extensive wetland ecosystems, including the great inland wetlands of Lake Okeechobee and the Everglades. These wetlands isolated portions of south Florida from the remainder of the peninsula and the peoples there developed distinctive local adaptations.⁵ By the late Archaic period, the peoples of south Florida had settled in small villages, and hunted and gathered a diverse diet of marine and freshwater animals, especially fish and turtles. In addition, they collected plant parts such as acorns for flour. In south Florida, village sites were located exclusively on islands along the coast. Hunters and gatherers used the inhospitable inland swamps only seasonally. However, like Paleo-Indians before them, they continued to be non-agricultural. A critical feature of their villages was the construction of mounds, particularly using shells to elevate home sites and burial sites above water.

The Glades period from 2,500 BP to AD 1,513 was a time of evolving local cultural adaptation to the emerging south Florida environment.⁶ The Calusa, as did their predecessors, lived in large villages on high ground, especially on islands along the coast, with the largest being on Pine Island on the Gulf of Mexico coast north-west of the Glade region. Elevation was one of the crucial factors in defining a village site.

Useppa Island, enjoying the highest elevation along the Gulf coast, was occupied continuously, and with little change in customs, for 5,000 years; Mound Key, the seat of the chief of the Calusa, was a largely artificial island consisting of a 10 m high platform built of shells; and on Pine Island canals were dug for access, one of which ran 5 km.⁷ Some islands were made many metres high, of shells, with internal networks of ridges, mounds, lagoons as well as seawalls and jetties, also made of shells that protected the village harbour. On Marco Island, canals ran to the centre of the island adjacent to which houses were built. Indians in this period lived not only on islands and high ground along the Gulf of Mexico but also along the southern coast, in the Florida Keys, along the rock and sand ridge east of the Everglades, and on the high ground near Lake Okeechobee.

The Calusa was a sophisticated society characterised by artistically crafted artefacts, organised hierarchies, and a region-wide political structure.⁸ The major chief from Mound Key overlorded as many as 50 tributary villages along both south Florida coasts, including the Tequesta and Jobe Indians who resided along the eastern edge of the Everglades (areas later to be Miami to Palm Beaches).⁹ The economy continued to be based on seasonal gathering, fishing, and some hunting. There is little evidence of agriculture along the coast. Fruits and plant materials were gathered seasonally, supplemented by trade with inland villages along Lake Okeechobee, where some root crop agriculture probably occurred. Most of the diet was marine and estuarine derived—resources that were highly seasonal. Fertility rituals developed around this seasonality—for example, the seasonal migrations of the mullet were accompanied by human sacrifice.¹⁰ The rich food sources of the Gulf estuaries supported population growth. In 1566, Pedro Menendez de Aviles was hosted by more than 4,000 Calusa on Mound Key, suggesting the population numbered about 10,000.¹¹ It is estimated that by AD 800 Indians occupied all suitable living sites in south Florida that included all the available high ground. They did not live in the Everglades, which was used only for seasonal forays without permanent habitation. Dependence on marine and estuarine food sources to support the large population was also the imperative for Calusa dominance over the remaining tribes, as food redistribution was critical to population maintenance.¹²

Thus at the time of Spanish contact, south Florida was fully and sustainably populated. People used the highest ground and were able to elevate sites further by using seashells to create mounds and dikes, and to dig canals for transport trails. There was no local agricultural tradition, given the tiny amount of dry ground. The economy relied on subsistence exploitation—fishing, hunting and gathering—as ancestral economies had done for several thousand years. Much of this culture was driven by opportunities to exploit natural resources and the landscape, but at the same time, exploitation was restricted by the limited technology available. With access only to shells and hand labour it was beyond the ability of local villages further to drain, canalise and fill land. Exploitation, and the redistribution of estuarine resources, drove both the economy and local politics.

The next cultural period, which may be termed the Contact period, following first contact by Europeans, was a time of cultural extinction in south Florida. In 1513 on the

east coast, and 1565 on the west coast, the Spanish began their contacts. Overall, the marshes and swamps of south Florida proved of little interest to the Spanish, who recognised the land correctly as a 'very poor land subject to inundation',¹³ other than their concerns over issues such as shipwrecks, pirates, and incursions by other Europeans. In south Florida, they left little direct physical impact. However, Spanish contact did begin the annihilation of the indigenous Indians through disease and removal, first by the Spanish and later by northern Indians and Americans. Thus began a period in which south Florida was essentially depopulated, and ancient cultural traditions lost. By the mid-18th century the few remaining Indians led a poor, seasonally nomadic fishing existence. In 1763, nearly all the remaining Indians chose to leave with the Spanish when Florida was deeded to England.¹⁴

Then followed what may be called the Unoccupied period. South Florida was little populated for 150 years, from the first departure of the Spanish until the end of the 19th century. The environment that in any case had been little changed by thousands of years of occupancy by indigenous Indians, other than elevation of their home sites, reverted completely to its natural situation. The ancient coastal village sites were reclaimed by vegetation and the interior wetlands, which were never altered by early Indians, continued to function in their natural way. For this long period, natural processes continued unabated and the land was undisturbed by people. There are tales that when people returned they found animals that had lost their wariness of humans. It is likely that marine and estuarine stocks recovered and plant communities, mammals, and birds achieved a natural balance with the seasonal environment.

The period of re-occupancy of south Florida may be called the American period. The human-determined future of south Florida was driven by the American imperative for national expansion. Four aspects of this expansion together had profound effects locally. The first was the policy of removal of Indians from the eastern USA. The second was the opening of land for agriculture. The third was the availability of pioneers ready to seek new opportunities in newly opened lands. The fourth was the improved technology that came with the onset of the industrial revolution in America which allowed for expanded Everglades development that had been technologically impossible for early inhabitants of Florida. All of these forces came together in south Florida around 1880.

The removal policy in south-eastern North America resulted in two cultural traditions of Creek Indians migrating into Florida, who, with escaped slaves, evolved quickly into the Seminole nation.¹⁵ After the Second and Third Seminole Wars (1835–1842, 1854–1858) remnant Seminoles retreated from their temperate forests to the Everglades. These groups thus may be considered intra-national 'immigrants', first in a rising stream of modern-day intra-national and international migrants to south Florida. One wonders whether, like many later immigrants, some Seminoles may have seen south Florida as a temporary respite. The cultural shift required of them in migrating to the Everglades was profound indeed, as the Creeks were hunters and agriculturalists with corn as their staple. But the Everglades, marked by impassable sawgrass sloughs, limited game, few fish, and seasonally fluctuating water depths, provided as little sustenance as it did for previous Indians, who had used it

only seasonally. So the Seminoles in the Everglades developed a family-based culture (since the islands were small), relying on only small-game hunting, fishing, gathering and small-scale agriculture as well as on extensive trade with Americans of hunted goods for manufactured goods. For the first time since its formation, the Everglades was occupied permanently by people.

Contemporaneously, the wars and the Seminole's escape into the swamps without surrender brought American adventurers into the area, who found the muck lands of the Everglades to hold intriguing promise for agriculture. Drainage of lands for agriculture was firm government policy from 1850 and the resulting story of the drainage of the Everglades is well known.¹⁶ By 1881, 9,800,000 ha of the Everglades had been sold by the state of Florida for drainage, and, through various incarnations, the process continued for 40 years. Drainage was a societal imperative that took several successive approaches as the decades passed by, each driven by the social pressures of the day leading eventually to the management of undrainable land for flood control and water management.¹⁷ Drainage was also, of course, driven by society's new technological abilities. The two dominant pressures benefiting from drainage were settlement, which increased during the period, and agriculture, which eventually took hold on drained land south of Lake Okeechobee and on seasonal lands along the edges of the inland marsh.

The settlement of south Florida by Americans was not an easy task, but one that was well underway within a decade of the appearance of the first dredges. Although most of America's pioneering spirit was directed to the west of the continent, a few saw the opportunities of south Florida. Settlement of American pioneers along the east coast began at the same time as drainage, starting on the high ground along the coasts. Market hunters efficiently penetrated well inland, using firearms and traps to hunt alligators, raccoons, otter, and plume birds; populations of each in turn rapidly crashed. For example, commercial fishing began on Lake Okeechobee in 1883, as soon as the dredges had worked a couple of years. After the American Civil War (1870), there were 85 residents of eastern south Florida, derived from the American north, Bahamas, and Europe.¹⁸ These people built rough houses, hunted, fished, gathered, farmed, and harvested coontie (*Zamia pumila*, a cycad that the Indians had taught pioneers to make into a marketable flour). Their settlements occupied the same high grounds as the ancient Calusa, Jobe, and Tequesta villages. The area was visited by wealthy yachtsmen and sportsmen, who hunted big game in the pinelands and large fish along the coast. These American settlers differed from their predecessors in their incessant attempts to farm the rocky and wet land, soon aided by the machinery of the industrial revolution. Within 20 years these new residents were able to use technological innovations to dig through the muck and rock, build extensive canals, elevate land, and fill bay bottoms in ways that had been impossible before. The turning point of the American period was the enticement of Flagler's railroad to the small town of Miami in 1896.¹⁹ By that time people had again settled all along the coast, but the railroad created a city in Miami, unbeknownst to them the site of one of the Tequesta Indian villages. The history from that moment to present is one of ever-increasing population growth, colonisation of recently drained land further from the coast, and modernisation, with the attendant

social pressures and evolution.²⁰ This evolution of the human development of the Everglades is an example of Lenski's²¹ contention that it is the technology of a given society that spurs cultural change. This is demonstrated in historical man-made environmental changes that took place (and paralleled technological developments) from early hunter-gatherers in Florida to the rapid development that occurred in the 20th century with the onset of improved technology.

The Current Culture of South Florida

The current cultural heritage of south Florida is a study in contrasts. On the increasingly unflooded land of south Florida, mega-cities have proliferated over the past 120 years. Florida's population has been doubling every 20 years, resulting in a 2000 census of 6,290,000 residents in the four counties of south Florida.²² The modern inhabitants have highly diverse cultural backgrounds. Racially, 70% of the population is white, 20% black, 1.7% Asian and, importantly to our history, 0.2% remains American Indian.²³ By ethnic origin, 40% of the population of south Florida is Hispanic, which in itself is a far from homogeneous group. The dominant group is Cuban (18% of the population), but 21% come from other nations including Puerto Rico (3.4%), Mexico (1.5%), as well as sizeable communities from Nicaragua, the Dominican Republic, Peru, Honduras, Venezuela, Colombia, and Brazil.²⁴ Non-Hispanic Jamaicans and Haitians also have substantial communities. In 2000, over a half million south Floridians identified themselves as 'some other race' from those on the standard list being offered—Mayans and Haitians, for example, seem to disavow existing narrow ethnic categories.²⁵ From 1990 to 2000, the increase in foreign-born residents in south Florida was nearly half a million people.²⁶ Among the fastest growing are immigrants from Haiti. They come from the poorest nation in the Western Hemisphere, have limited resources and education, speak a very different language, and find themselves without special benefits, occupying the bottom of the economic scale, although they too are rising economically.²⁷ Despite the relatively rapid economic move of immigrants to Miami into the American middle class, the economic extremes in south Florida are indeed extreme. The median household income of \$35,966 is one of the lowest of all major cities in the USA, and in Miami-Dade County, 2.7% of households make over \$200,000 per year but 15% of households are below the poverty line.²⁸

Ethnic diversity has led to economic diversity and political strength. All ethnic groups are active in, and indeed some dominate, the local economy. Shopkeepers profit from the diverse demands of different nationalities. Much of the normal business practice in south Florida is now owned and operated by Hispanics, particularly Cubans who now have had two generations to establish themselves. Added to the usual business culture are people from many countries working in national and international industries centred in Miami—international finance, import, law, shipping, pleasure-cruising and other tourism-based activities. With population and economic strength comes political strength. Politically the Cuban community of south Florida has a favoured standing with the government of the USA, a standing strong enough to wield influence at national elections and in international relations.

As in economics and politics, culturally Miami and south Florida today are a matrix of divergent yet intermingling influences. While traditional American customs are followed in south Florida, each nationality also brings its own customs and values. Added to the American holidays are festivals, participated in by all segments of the community, highlighting cultures such as Cuba (Calle Ocho Festival), the Bahamas (Junkaroo), Mexico (Cinco de Mayo), and Haiti (Haitian Independence Festival). Added to the traditional American religions are Santeria from Cuba and Voodoo from Haiti.²⁹ Woven into the city landscape are ethnic enclaves such as Little Havana and Little Haiti. Spanish, not English, is the language expected in much of economic intercourse. South Florida today is both rich and poor; it is Anglo, African American, Hispanic and Creole; it has families that are economically depressed and businesses that are international in scope and power; it is politically balkanised yet influential nationally and internationally.

A universality of south Florida is that all its inhabitants, including Native Americans, may be considered to be relatively recent immigrants. Many of these arrived in Florida from international places of origin. However, those from all places north of southern Florida (yet still in the USA) can also be considered 'intra-national' immigrants themselves. They have, after all, migrated within their own country to a vastly different sub-tropical climate filled with plant and animal species, soil and landscape that is distinctly different from most of the USA. In addition, Florida post-1900 has had an international flavour, which began with early Bahamian settlers and continues today with the prevalence of foreign languages, global arts, and exotic foods. Therefore, US northerners have also been cultural immigrants. As we examine these immigrant groups in south Florida, it should be asked whether the status of 'immigrant' has affected the way in which arrivals to Florida have interacted with the natural environment during the past century. Since so many people in south Florida moved here from elsewhere, has this affected their relationship to place and the way in which they perceive and/or exploit natural resources? There are two aspects: the cultural traditions from which the immigrant derived and the persistent sense of impermanence.

A common feature of most of the cultural heritages of the immigrants to south Florida is that they come from cultures that have limited experience with environmental protection and/or are highly exploitative of their natural environment. Cuba, Haiti, Jamaica, and Central America were, and largely remain, quite rural and agricultural and poor, a legacy of their colonial past. Such immigrants bring with them little environmental consciousness and tend to perceive nature as infinite or having little value.³⁰ In other sections of the USA, such as California, evidence suggests that immigrants have played a role in burgeoning environmental justice issues.³¹ And Pfeffer and Stycos have found that stereotypes of immigrants as less concerned about the environment in New York City were unsupported, although indeed they were less likely to participate in the 'mainstream' pro-environment movement.³² Blacks from Haiti come from a country that is one of the most extreme examples of a natural heritage destroyed. Upon arrival in south Florida, most Haitians have little personal experience in environmental protection. Intra-national black immigrants to south Florida derive from settings with little experience in environmental conservation and confront overwhelming social

issues. Recent research suggests that black intra-national immigrants to Miami who grew up with either agricultural roots in the southern USA or in the Bahamian culture may have developed connections to nature and perhaps enhanced environmental concerns.³³ And Haiti's situation may not indicate that its people value the natural environment any less; instead, simply that they value survival. How immigrant values and experiences may translate into a new cultural setting in south Florida remain to be seen. A background of poverty and political displacement does not predispose individuals to care much about the natural heritage of a new land, especially a culturally unfamiliar land to which they recently migrated.

International immigrants from Cuba, Haiti and other distant lands may share an additional and important characteristic with the intra-national US immigrants that may matter more than their land of origin. The majority of individuals in both groups considered themselves 'short-timers' upon their arrival in Florida. Early Cuban immigrants often believed that they would return home and saw south Florida as a place of temporary asylum. The same may be said of some Haitians, of Venezuelans and Colombians fleeing political problems, economic issues, and violence. Many in the first generation hope that situations in their country of origin will improve so that they might return. Intra-national immigrants from US cities such as New York, Boston and Chicago were often retirees with few relatives and limited future stakes in Florida. Other intra-nationals were part-time residents, people buying second homes, temporary labourers, 'get-rich-quick' schemers, people lured by the development boom seeking economic incentive, and people searching for temporary respite from colder climates none of whom envisage south Florida as 'home'. Unlike the ancient Calusa Indians, later people arrived with the option, and sometimes the hope, of leaving if the boom went bust, if the land were despoiled, if the aquifers dried up or if their native land from Nicaragua to New York beckoned their return. Short-term investments and profits and temporal 'place' commitments appeared to lead to short-term local environmental policies and either aggressively abusive or laissez-faire attitudes towards natural resources.

The international and intra-national transport of these views of impermanence and resource undervaluation to south Florida in the past several decades has increased pressures for the development of the remaining wetlands in south Florida. In the past two decades, the federal and state governments have taken dramatic measures aimed at preserving or restoring the Everglades.³⁴ Yet in this same period, development has pushed to the very edge of the levees surrounding the remaining natural Everglades, imperilling water supplies and even occasioning the state of Florida to constrain local development proposals.³⁵ There seems, in fact, to be a fundamental policy gap between national and local aspirations with respect to conservation of the local natural heritage.

Persistent Patterns of Human Culture in South Florida

From the earliest times of human occupancy in south Florida, home sites were concentrated on high ground. Sites were elevated to the greatest extent technologically possible using available materials and manpower. Where possible, canals were dug,

firstly by hand. Levees and seawalls were built with mounds of shell. An economy based on fishing, minor hunting, gathering and trade developed and persisted. With the exception of the Spanish, who for the most part engaged only marginally in Florida, and the Seminoles, who were forced by ethnic cleansing into the previously uninhabitable Everglades, the methods of occupying south Florida did not change fundamentally from the development of the Everglades, 5,000 years BP, until the late 19th century AD—from the Archaic, through the Calusa, to the American periods. And throughout this time human occupancy of south Florida was inherently exploitative. From prehistory to the industrial revolution, however, exploitation was limited to a subsistence-level existence for a population in the thousands managed by locally adapted cultural traditions.

What changed, starting in the late 19th century, was the employment of mechanised means to achieve a national vision that favoured settlement and agriculture of this seemingly open land. Prior to this time, large-scale settlement, full-time occupancy of the interior Everglades, extensive drainage, and agriculture were never part of the interaction of man and environment in south Florida. But the evidence suggests that it was not for lack of desire or even of effort, but rather a matter of not being able to accomplish this goal with available technology. So the modern drive for settlement, attendant population increases and progressive encroachment into remaining seasonal wetlands may be seen as a continuation of the processes of thousands of years of human occupancy of south Florida. The environmental and political dominance of agriculture is, indeed, a new feature; one that is a driving force in contemporary environmental degradation.³⁶ Another force is pressure for living space, given that in less than 120 years the human population increased from fewer than 100 to over 6 million people. Interestingly, exploiting marine animals continues to be an important part of the local culture. In Florida as a whole over 103 million pounds of seafood are taken annually³⁷—a modern reflection of the marine economy that sustained the Archaic Indians of south Florida. However, the queen conch, which supplied the high ground for home sites for generations of Indians, is now a threatened species.

National policy now requires adherence to environmental standards. Much of the remnant wetland is under the control of national and state governments. While national regulations control the drainage and infilling of wetlands and the quality of surface water, these remain political, as well as environmental, issues. There have been recent rollbacks of some standards and laws that provide environmental protection, including issues over the definition and protection of wetlands. And the issue remains that local governments control local development. The apparent desire for continued development exhibited by the highly diverse local population, most of whom are first- or second-generation international or intra-national immigrants to south Florida, may be in some small measure balanced by national and state policy. Of interest is that with the legal and publicity wars over the south Florida environment, the remaining Indian nations of south Florida (who have recently gained an economic advantage through their support of gaming and other activities not allowed in the rest of Florida), have become leaders at the forefront of efforts to protect the Everglades from future development. Is it that the Indian nations of south Florida have the deepest sense of

permanence within the environment? Deep societal tensions remain between exploitation and conservation. Of course, the tension is unbalanced since most of the human-induced changes in the natural cultural heritage are irreversible, whereas the local human culture can choose to change.

Conclusions

The interaction between people and the environment in and around the Everglades of southern Florida is a story of international renown. From its beginning, even as the Everglades and local culture co-evolved, this interaction has been inherently exploitative of the environment. It was, for most of this period, also one of respect for that environment driven by seasonal uncertainty in the availability of critical resources, which deeply influenced religious, economic, and political practice. The respect for the natural heritage shown by indigenous Calusa was born of the fact that they could not control the annual instabilities other than ritualistically. The result was a society that existed sustainably because population size and dispersion, political power and social complexity were limited by those resources. Early Indian society in south Florida was ecologically sustainable because it had to be. This culture made little or no impact on the functioning of the natural environment, because it could not.

The 150-year hiatus in man's occupancy of south Florida provided an interlude, perhaps unique in North America, in which the natural heritage proceeded unimpeded in any way by humans, a period allowing insight into how the landscape would be functioning today without the influence of people. If prior to this hiatus human impact was minimal and population capped at sustainable levels, after the hiatus the new culture's ability to manipulate the landscape led to the imperative to do so and the exploding population has not yet seen its new cap. The result of the last 120 years is that much of the natural heritage of south Florida has been destroyed. It remains to be seen whether the adverse effects of degradation of the natural environment and/or the potential social or political pressure of a strong environmental ethic (whether originating at a grassroots local level, from the state, from the Indian nations, or from the national government) will inspire or provoke change towards a more sustainable environmental ethic. Could one or more of these scenarios eventually encourage a more respectful interaction with the remaining natural environment among a transplanted local population whose own heritage, from California to Cuba, from Hawaii to Haiti, has been environmentally exploitative?

Internationally, nationally and regionally, protection of the remnant Everglades environment is accepted as good public policy. But the details of what is good environmental policy for the remaining Everglades remain highly politicised and hotly debated. The approved programme to enhance flood control, security of water supply, and preserve part of the Everglades enjoys a governmental commitment of \$130 billion over 30 years, yet only a small proportion of these funds is scheduled to be spent on actual environmental restoration.³⁸ The adverse effect of environmental degradation on the economy, social viability, and sustainability is well understood, even in south Florida.³⁹ Locally, however, the desire for, or at least the tolerance of, environmental

exploitation continues unabated among the majority of the newly arrived population, whether they hail from Havana, New York, Caracas, or Quebec. The emergence of the newly wealthy resident Native American tribes as leaders in environmental protection may be the most fundamental example of the role of permanency. Admittedly, south Florida could not be home to 6.3 million people without intense management of the seasonal fluctuations that also deeply affected the indigenous cultures. The question now is—what is the human carrying capacity of this new environment? In the past 5,000 years, human populations have fluctuated in concert with climate, resources, and socio-political adaptations. What population can south Florida now sustain, how can it be supported, and at what stage does it overwhelm the ability of the local environment? What point is the point of environmental ‘no return’? Will the local community adopt the ethic of living within the constraints of the local environment, as is being urged by some in the larger environmental and political community? Can a local adaptation of the present cultural practices of the people of south Florida occur? Changes do come rapidly to immigrant peoples, especially in the third generation through education and personal economic advancement. Perhaps most importantly, will immigrants overcome an aura of impermanence and arrive at a vision of south Florida as embodying a permanent sense of place? It is easier to exploit a land and its resources when it is only a stopping point, a retirement layover, the location of a holiday home, a city you go to for a promotion, or a destination to wait in until your own country becomes politically or economically stable. If the land of south Florida becomes ‘home’, immigrants become stakeholders and may be convinced that short-term benefits inherent in environmental exploitation have pervasive long-term costs.

As shown in this paper, filling and elevating land, canal digging and resource exploitation have always been a dominant feature of human interaction with the Everglades, since before there was an Everglades. Viewing the human story as a continuous one puts it in a different, and perhaps more helpful, perspective than the more common view of environmentally respectful Indians and environmentally exploitative moderns. Both were attempting to live, eat and organise socially in an inherently inhospitable environment. Until the contact period, people had adapted their culture to sustain communities in balance with this difficult landscape. After the late 1880s, humans changed the equation and managed to do what ancient peoples could not, namely drastically alter the landscape itself with the assistance of modern technology. Man eventually won this interaction, even if perhaps only for the short term.

Notes

- [1] Kushlan, ‘Freshwater Marshes’, 329.
- [2] Zeiller, *A Prehistory of South Florida*, 29; Hoffmeister, *Land from the Sea*.
- [3] Zeiller, *A Prehistory of South Florida*, 50.
- [4] McCally, *The Everglades*, 31.
- [5] Ibid.
- [6] Ibid., 31–57; Tabeau, *Man in the Everglades*, 37.
- [7] Zeiller, *A Prehistory of South Florida*, 93–110; McCally, *The Everglades*, 47; Gilliland, *The Material Culture of Key Marco*.

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- [15] Covington, *The Seminoles of Florida*.
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