Bellevue
The old Munet homestead, Tallahassee
Contents

Editor’s note ........................................................................................................... 2

Note to readers ....................................................................................................... 3

Articles

A Lighter Shade of Green: Reproducing Nature in Central Florida
Kevin Archer ........................................................................................................... 4

The Pentagon and the Sunshine State
Barney Warf ......................................................................................................... 22

High Tech, Mickey Mouse, and Oranges: The Development and Coexistence of the Military-Space Industry and Tourism in Central Florida
Edward J. Malecki ................................................................................................. 37

Paynes Prairie: Biography of a Wetland
Christopher Meindl .............................................................................................. 54

Florida’s Bahamian Connection
Glenn Anderson ..................................................................................................... 68

Florida Agriculture and the Collapse of the State Farmer’s Alliance, 1880-1891
Shira Birnbaum ..................................................................................................... 81

Tallying Up the Cost of Hurricane Andrew
Morton D. Winsberg ............................................................................................... 99

Book Review

J.A. Henry, K.M. Portier and J. Coyne
The Climate and Weather of Florida
Reviewed by Morton D. Winsberg ........................................................................ 103
The Florida Geographer is the official publication of the Florida Society of Geographers and is distributed free to members of the society. It is a statewide journal, with coverage of geographical topics relating to the state. Manuscripts should deal with some social science or physical geography aspect of Florida or include Florida as an important component of a larger study.

Manuscripts are solicited from all who feel they have research worthy of dissemination. For matters of style, see articles in the present issue. Authors should not be dissuaded from submitting articles for review because of format considerations.

Authors should submit the final copy of the paper on an IBM-compatible diskette (3.5") in either double or high-density format. WordPerfect files are preferred; if not, please save files in ASCII (DOS text file) format.

This issue of the journal was desktop published using PageMaker 6.0 on a LaserJet printer.

Morton D. Winsberg
Florida State University

Editor, The Florida Geographer
To the readers of *The Florida Geographer*

This is the first issue of *The Florida Geographer* since 1992. When I assumed the editorship in January I had hopes to be able to put together an issue very rapidly, since it was my belief that there were many faculty and student papers throughout the state ready for submission. Optimistically, I even believed there might have been a sufficient number for two issues, and we would be able to fill in more than one year of the four that were lost. Even with the two articles that had been submitted before I became editor (Malecki’s and Meindl’s), it took five months to accumulate a sufficient number to complete this issue.

I believe that *The Florida Geographer* is a marvelous outlet for papers with a geographical theme about Florida. In the past most articles that have appeared in the journal have been written by members of the faculty of higher educational institutions. That also is true of this issue. Nonetheless, a rich potential source of papers is from students. The best way this source can be tapped is through the encouragement of faculty members. I urge those of you who have or have had graduate and undergraduate students who have written high-quality term papers for you about Florida to encourage them to submit their papers to *The Florida Geographer* for review. Meanwhile I will continue to solicit papers for submission through constant appeal, particularly through the Internet list server now in operation. To be listed please send a message to: listproc@mailer.fsu.edu. Include a message with no subject and with the following text: subscribe fla_geog<your name>.

At my expense I am printing extra copies of this issue so that the libraries of all institutions of higher education in the state will receive a copy. I hope both subscriptions and readership will be increased.

I would like to thank Peter Krafft and Jim Anderson of FSU’s Florida Resources and Environmental Analysis Center, who volunteered to compose this issue for the printer.

Morton D. Winsberg
Editor, *The Florida Geographer*
A Lighter Shade of Green: Reproducing Nature in Central Florida

Kevin Archer
University of South Florida

Imagineering Nature

Sorkin and others have recently described contemporary social and material developments as just so many “variations on the theme park” ideal (Sorkin 1992). This “theming” of everyday life is understood as relating directly to the transition from an industrial to a post-industrial society. Changes in the dominant forms of material production have led to what Lash and Urry (1994: 15) call the increasing “aestheticization of material objects,” or the “increasing sign value” of goods and services in post-industrial society. Image has become an increasingly important source of value, particularly in information rich, service-based economies. How well products, services, and even places are “imagineered” (in Disney parlance) for exchange is of ever greater concern in the quest for economic viability.

A similar process of imagineering is rapidly becoming the most dominant aspect of the human-nature nexus. This is particularly so in post-industrial societies like the United States where most people’s lived experience lacks any direct contact with non-human nature other than in the process of consumption or in the role of spectator. The model of this post-industrial relationship with nature is not the farm, mine, or industrial site but, rather, the garden, where nature is produced not so much to yield a material surplus but, rather, an aesthetic, symbolic one.

The present argument is somewhat different from the one put forth recently by Cronon concerning the growing number of wilderness buffs in post-industrial societies. Cronon argues that the dream of many contemporary environmentalists of a return to an: unworked natural landscape is very much the fantasy of people who have never themselves had to work the land to make a living—urban folk for
whom food comes from a supermarket or a restaurant instead of a field, and for whom the wooden houses in which they live and work apparently have no meaningful connection to the forests in which trees grow and die (1995: 80).


Yet, it is not so much that post-industrial folk do not work the land. After all, how many instances of the mis- and over-working of natural resources are necessary to bring home the point that those who work the land are often least likely to be good land stewards? Rather, the present argument is that, in evolving post-industrial societies, the majority of people do not come into much contact at all with non-human nature and what nature they do experience is increasingly imagineered for leisure or aesthetic consumption.

Indeed, the myth of a return to wilderness on the part of many environmentalists has been conjured by those who fully recognize this imagineering process. The very value of "wilderness" derives from a sense that it is desirable to cast humans completely out of the scene and let nature be somehow more natural. Yet, the quandary is that it could equally be argued that this mythology is merely another sort of human imagineering of nature, in this case imagineering nature on the model of Eden, equally a site of leisure and aesthetic consumption. The only difference between this type of imagineering of nature and what takes place, say, in Disney World, are the kinds of leisure and aesthetic attributes that come to be privileged in the competing visions of what is most "natural."

Disney-Nature

In this paper, I attempt to fill in the details and implications of this argument on the basis of two case-studies of the large-scale imagineering of nature in central Florida: Disney's own as well as the plan to restore a major section of the Kissimmee River. Although the imagineering process may be most obvious with regard to Disney-Nature, the apparently more scientifically sound restoration of the Kissimmee River can equally be seen as a form of imagineering. The key in both cases is: whose image of nature is to be produced, for what purposes, and with what social and material results?
In terms of Disney-Nature, well within the 43-square-mile (69-square-kilometer) Disney territory in central Florida is found Bay Lake, an approximately 450-acre (182-hectare) body of water. Unlike other lakes in this part of Florida, the water of Bay Lake is surprisingly clear, there is very little aquatic vegetation at its surface or along its shores, and these shores themselves have beaches with a fine grain white sand base; most unlike the muck and reeds and murky waters found along the shores of Florida lakes outside the Disney gates. Just west of Bay Lake is a similar body of water covering 200 acres, the Seven Seas Lagoon, the water and beaches of which seem even more clear and clean and, indeed, safe and sanitized. These and all other water bodies on Disney’s property seem entirely out-of-place where they are in the wider context of the central Florida natural environment yet, at the same time, quite appropriately placed within the context of Disney’s world.

The reason for Bay Lake’s difference is not too difficult to determine. Disney took full control of his vast Florida territory by pressuring the Florida Legislature to provide his company the powers to proceed with development without state intervention. The Reedy Creek Improvement District was formed for this purpose in 1967 as an essentially private political structure with virtually all of the powers accorded to other local political structures, including the ultimate power to develop the territory within its borders (Foglesong 1995). In this context, the original Bay Lake, exhibiting all the ecological characteristics of its place, simply did not fit Disney’s image of a proper natural environment.

So Bay Lake was completely drained, its bottom dredged of several feet of muck and vegetation to reveal a sand base, and then it was refilled with clarified water. The dredgings were used to create the rolling topography of Disney World and some of the sand base was distributed along the newly cleared and weeded shores to create clean beaches. In the meantime, Seven Seas Lagoon was dug out of neighboring swampland and modeled after the newly sanitized Bay Lake.

A Disnifired nature was thus produced as a direct result of “blending creative imagination with technical knowhow” or, in Disney discourse, as a result of “imagineering” (Beard 1982: 25). Like the social relations of the Disney’s world, Disney-Nature is actively imagineered to be safe, sanitized, human-friendly, even delightful, or, in other words, Disney-Nature is produced singularly
to entertain humans. It is a nature that is pleasing to the eye, where everything seems to fit, and where nothing ever seems to disturb the prevailing equilibrium. In short, Disney-Nature is nature as it should be for humans, providing a quite innocuous backdrop for human activity.

In the southeastern portion of Bay Lake is found an even more profound example of imagineered nature: Discovery Island. This 11 1/2-acre (4.7-hectare) island was produced from the ground up. As a popular guidebook puts it, Discovery Island's:

- long, white-sand beaches, its hills, and its hidden groves were sculpted and planned by Disney Imagineers, who brought in 15,000 cubic yards of sandy soil, added 1,000 tons of boulders and trees, planted 20 types of palm trees, 10 species of bamboo, and dozens of other plants whose original habitats ranged from Argentina, Trinidad, and Costa Rica to the Himalayas and South Africa.

The guidebook goes on without the least bit of irony to state that "despite all this work, Discovery Island remains the least artificial attraction in Walt Disney World" (Fodor's 1995: 135).

Clearly, Discovery Island is unlike any other lake island in central Florida. It is now home not only to exotic plant species but birds such as swans, pelicans, flamingos, and cranes and even tortoises and Asian deer. Discovery Island is a veritable hodgepodge of mostly non-indigenous landforms and plant and animal species which have very little traditional ecological connection either with each other or with the nature outside Disney's gates. This produced natural diversity ironically flaunts the exotic yet clearly was imagineered to suggest authenticity, as the flora and fauna are largely of the sub-tropics, if not necessarily from Florida. Natural authenticity is also suggested by the fact that the movement of animals is not apparently restricted and that Disney guests are allowed to wander through the various themed areas of the island at their leisure. As another popular guidebook puts it, "far from taking a backseat to the manmade, nature is the big deal on Discovery Island" (Birnbaum 1994: 198; emphasis added).

Like other zoos and botanical gardens, the nature of Discovery Island is not only out-of-place, but also out-of-time. Change as disturbance to the imagineered ecological equilibrium is simply not allowed to happen as it would upset the choreography of species
that, ironically, lends authenticity to the display. Change of this sort is also to be avoided because it might threaten the security of the human consumers of nature, rendering nature less benign, even out-of-control. The imagineered nature of such gardens as well as most suburban yards tend, for this reason, to suppress the evolutionary forces of species competition and other forms of species conflict or violence. Natural evolution, other than tightly controlled, imagineered evolution, is simply to be avoided in such gardens.

This is the key to the irony of authenticity at a place like Discovery Island. In order for Disney guests to experience the authentic natural world, nature must be actively managed. Authentic nature thus becomes a nature that actually has been consciously selected and maintained by humans. While Disney-Nature may be an extreme example of this type of authenticity, for many, particularly in the post-industrial world, this type of authentic natural experience is the only type that is experienced. Authentic nature is best, for most of us, the more it actually is like Disney-Nature: safe, sanitized, and easily consumed. If the scenery is green, the water is clear, and the existing plant and animal species are non-threatening to us or even to each other, then it is nature as it should be. In this context, it simply does not matter that the anemones on the aquarium walls are ceramic (as long as they are not too obvious), or that Disney islands are entirely humanly constructed, or that Kentucky Bluegrass is really not native to Kentucky.

But my argument goes beyond Disney. For most living in a post-industrial context, the imagineering of nature is commonplace. From landscaping and lawn services, to commons fees for the maintenance of sub-division nature, to chemical lawns that never brown, nature is rendered safe, sanitized, and thus easily consumed. To bring this point home, it is necessary to return to Discovery Island in order to elaborate on one crucial aspect of this post-industrial process already alluded to, that is, the control of change or disturbance to the imagineered ecological equilibrium.

Almost from the beginning, the nature of Discovery Island has been encroached upon by outside forces. One of the most difficult problems has been the black vulture, a migratory scavenger that is quite prevalent throughout the year in central Florida. These birds tend to swarm around the island, roost in its carefully choreographed trees, and generally bother the exotic bird and animal species on the island by, among other things, taking roosts and stealing provided food. Disney guests are also put off by the birds,
particularly because they are ugly, loud, and they defecate and regurgitate on the normally spotless Disney pathways. This species simply does not fit in Disney-Nature even though, quite ironically, it is more native to the place than almost any other on the island.

The black vulture is thus a weed in the garden. And like any weed, it must be removed or exterminated as it is a threat to the established equilibrium. It is not surprising, then, that Disney cast members (that is, workers) set out in the still of one night in late 1989 to do something about the pest. Night activity was important ostensibly so as not to disturb guests. It also was important, it now turns out, because the cast members were ordered to take care of the problem by whatever means possible. They did, of course, and it was not the sort of scene that is popularly associated with the Disney name. Cast members not only forcibly took hold of the birds and physically removed them, a good number of the harder to catch vultures were actually beaten to death with clubs.

Disney attempted to keep this extremely violent episode of species-cleansing on Discovery Island quiet for obvious reasons. The local press nevertheless got wind of it and Disney and, significantly, five individual workers were charged with animal cruelty and eventually convicted of a misdemeanor carrying a $95,000 penalty. The Florida Game and Fresh Water Commission was also ordered to keep close watch on Disney actions in the future (St. Petersburg Times 1990).

There are many possible pathways out of this story. Most generally, it brings up the question of how to determine what is "native" and what is "exotic" in a particular ecosystem, something that is currently exercising many in the emerging fields of conservation biology (Soulé 1990) and restoration ecology (Cairns 1995). A related question concerns what is to be taken as authentic or appropriate nature as opposed to ersatz or inappropriate nature and, indeed, on what basis, and by whom, this is to be determined. As discussed below, both questions are now quite controversial after the so-called post-modern turn in the science of ecology (Ferré 1995; Worster 1995).

Most important for the present argument, however, is that the attempted species cleansing at Discovery Island starkly exhibits the extent to which an imagineered ecological equilibrium such as a garden needs to be actively managed in order to remain in equilibrium. The experience also underscores that gardeners need to do whatever it takes to preserve such an equilibrium. In other words,
while the imagineered nature within the fence may be harmless, non-changing and, then, quite pleasing, in order to keep it this way, extreme violence must be wrought to maintain the fences as barriers to outside, possibly disruptive natural forces.

Disappearing Nature

For most post-industrial folk the imagineering of nature means two things. First, not only do such folk not have direct contact with non-human nature in their daily lives but also, secondly, what contact they do have is with carefully imagineered nature. Again, as the guidebook states, it is not the artificial or the "manmade" but actually nature that predominates on Discovery Island. And, again, in this context, it simply does not matter how really natural this nature is, as long as it looks right and is ultimately harmless. Indeed, from this perspective, the desire is generally to emulate Disney-Nature in individual yards and common green spaces and not to question its authenticity.

More specific implications of this evolving post-industrial understanding of nature can be found in the literature on global ecological problems. Nabhan, an ethnographer and conservationist working among the peoples of the Sonoran Desert, has recently described the fading knowledge of the natural environment exhibited between generations of four different cultures, Mexican, Anglo, Yaqui and O'odham. As he recounts:

Essentially we learned that with regard to knowledge about the natural world, intergenerational differences within cultures are becoming as great as the gaps between cultures. While showing a booklet of drawings of common desert plants and animals to O'odham children and their grandparents, for example, we realized that the children knew only a third of the names for these desert organisms in their native language than their grandparents knew.

Of interest is what Nabhan considers to be a major cause of this decline in knowledge of the natural environment: the fact that the children "spend more time in classrooms and in front of the television than they do directly interacting with their natural surroundings" (Nabhan 1995: 98-99).
A similar sentiment is expressed by Soulé, considered to be one of the founders of the new transdiscipline of conservation biology, in the midst of an explanation as to why conservation policies do not seem to be very effective in slowing the degradation of the global environment. It is not, according to him, a problem resulting from our lack of understanding of natural processes. Rather it is a problem resulting from having the wrong sort of people, that is, politicians and bureaucrats, formulating environmental policies and managing conservation projects. As Soulé (1995:162) puts it:

most politicians and bureaucrats are city people.
The influence of city people will increase as the world becomes more urban. This is one of the quietest and most profound changes of consciousness that has occurred in the twentieth century. It does not portend well for informed, compassionate decisions about the future of wild nature.

While there is no little scientific chauvinism in Soulé’s account, his reading of the global situation is similar to Nabhan’s reading of a specific local situation. Classrooms and televisions disseminate “city” messages creating “city” people even outside the city. In short, if “post-industrial” is substituted for “city” in the last citation, Soulé’s message is essentially the same as the present one. Because fewer and fewer of us need to have daily truck with non-human nature, we have lost knowledge of this nature, and, as a result, this nature has effectively disappeared from our view only to be replaced, increasingly and largely unbeknownst to most of us, by imagineered nature. The key question at this point, however, is: does any of this matter? or, rather, is there anything really wrong with imagineered nature?

The implication of Soulé’s account is that leaving city people in charge will only lead to increasing levels of ecological degradation on a global scale. Such people do not know nature and therefore cannot adequately manage it nor do they have the proper care to succeed in the task. The scientific chauvinism in Soulé’s account, of course, is the implication that only “real” natural scientists like himself know properly what to do to solve ecological problems and would in fact solve them, if only city people would listen or, indeed, step aside. From this point of view, imagineering nature in the manner described in this paper does not solve ecological problems but, in fact, is an ecological problem itself. Perhaps, then, the answer
to the question about imagineered nature can be found in the work of natural scientists.

Restoring the Kissimmee River

To abbreviate the discussion I will focus on two specific, yet highly interrelated, issues found in the natural science literature. The first issue concerns the now quite topically important issue of biological diversity. A now common concern among ecologists is the apparently increasing rate by which biodiversity is being lost on a global scale, particularly as a result of human activity. According to many ecologists and summed up by Ehrlich and Wilson (1991), biodiversity is important for three broad reasons which can be paraphrased as: moral, that is, humans should be good stewards of their natural home, economic, that is, diversity allows for a larger number of potential natural goods for human benefit, and natural, that is, species diversity allows ecosystem processes successfully to provide essential ecological services to other parts of nature. Save for the moral reasoning, in other words, maintaining biodiversity appears to be a way to hedge our bets as to how much our very existence as a species depends on non-human nature.

From this point of view, Disney-Nature, as well as the imagineered nature of the typical suburban yard, is undesirable because such imagineering appears necessarily as a thinning out of natural diversity. The very process of weeding the flora and fauna in order to maintain the designed equilibrium of such gardens implies as much. To the extent that ever larger portions of nature are imagineered, then, so biodiversity is likely to decrease.

A response to this charge, however, is that imagineering nature does not necessarily mean a thinning of biodiversity. Discovery Island, for example, is nothing if not species diverse; in fact, for an island of its size it is arguably over diverse by any coherent measure, biological or aesthetic. Moreover, the emerging fields of restoration and landscape ecology involve design and planning processes that are very similar to imagineering (Cairns 1995; Kim and Weaver 1994; Naveh and Lieberman 1994). There is no reason to believe, then, that nature cannot be imagineered in a manner that conserves, and even enhances, biodiversity.

Here is where the second issue discussed in the ecological literature becomes important. This involves the larger question of the precise ways in which natural species actually interact and
evolve. A traditional cut at the difference between Disney imagineering and that of restoration ecologists, for example, is that the latter imagineer on the basis of a full and careful understanding of the ways in which diverse species interact to form a place-bound and place-creative community. That is, while Discovery Island may be species diverse, this diversity is really only the juxtaposition of difference with no important ecological links among the species. Discovery Island is not an ecosystem that potentially could exist on its own, or with much lower levels of human intervention. Conversely, what restoration ecologists attempt to do is to recreate lost ecosystems, species piece by species piece, the ultimate goal of which is to leave these restored ecosystems alone to evolve on their own.

A concrete example of this sort of argument can be found in the debate over the plan to restore a large section of the Kissimmee River. As is now well known, the meanders of the Kissimmee River were destroyed between 1962 and 1970 as a result of a federally authorized flood control project. The resulting canal runs straight and relatively deep toward Lake Okeechobee to the south. This original Kissimmee project “obliterated” approximately 56 kilometers of river channel by converting a 166 kilometer long meandering river with a 1.5-to-3-kilometer-wide floodplain to a 90-kilometer long, 9 meter deep, 64-to-105 meter wide canal. In total, 2,800 hectares of floodplain wetlands were destroyed (Toth 1993, 30). Costing on the order of $30 million dollars, this large-scale imagineering of a riverine environment opened up land for farming and housing, rendered the river navigable year-round for large pleasure craft, and still provides effective flood control for the surrounding areas.

Less positive results of the project, however, began to manifest themselves soon after its completion. Altered river flow provided much less favorable habitat for many of the indigenous and migratory flora and fauna of the area. Channelization also provided a virtual highway for dumped effluent from new farms and settlements along the banks, severely clouding the waters of Lake Okeechobee. These, and other, negative ecological effects of the flood control project eventually led many to demand some sort of ameliorative action by the mid-1960s (Kissimmee River Restoration Study 1992).

The result of this growing demand for ecological restitution was a proposal to restore the Kissimmee’s meanders in order to recover
biodiversity and to slow the pollution of Lake Okeechobee. According to the recommended proposal of the Army Corps of Engineers (ironically the same organization that handled the original channelization project), such a project:

will provide the conditions necessary for natural reestablshment of an ecosystem similar to that which existed and functioned prior to construction of the basin’s flood control project. The restored ecosystem will include 56 miles (90 kilometers) of restored river, about 29,000 acres (11,736 hectares) of restored wetlands, improved water quality, and restored conditions for over 300 fish and wildlife species, including waterfowl, wading birds, alligators, and three endangered species (Kissimmee River Restoration Project 1992: 26).

The cost of the proposed restoration project is estimated to be $422,667,000 (USD) with the Federal Government picking up about 30 percent and “non-Federal sources” picking up the remaining 70 percent. Proponents of the project have argued that the money would be well spent, both because of the increase in biodiversity and the decrease in the rate of the eutrophication of Lake Okeechobee.

Now, I want to argue that this proposed restoration of the Kissimmee River is just as much an example of imagineering nature as is the construction of Discovery Island. The difference, of course, is that great pains will be taken in the case of the Kissimmee both to increase biodiversity and restore ecological integrity. That is, an attempt will be made to restore an entire functioning ecosystem. Yet, the project remains an example of imagineering in the sense that an image of a better, or more “real” in this case, nature is assumed as a model to be constructed, and ultimately consumed, by humans. Humankind has taken on the role of producer, manager, and primary consumer of non-human nature in both the Disney and the Kissimmee River case.

The significant social difference entailed in the two cases, however, is an important part of the present argument. Disney-Nature is arguably more molded according to post-industrial tastes. A restored Kissimmee River offers benefits which seem quite distant not only to the farmers, residents, and houseboaters to be displaced in the process, but also to many others who never intend to canoe,
hike, or birdwatch in the restored “wildlands.” It may be that increasingly popular environmental discourse has convinced many “city-people” of the ecological necessity of restoration. Yet, the sort of nature to be restored will be much less controllable, and therefore potentially much more dangerous to humans than what exists today. One wonders, for example, how much popular support for such a project will remain after the first major flood occurs, or after mosquitoes begin to breed in the restored wetlands, or after snakes and other nefarious fauna return in great numbers, or after the family boat runs aground. That is, most support for restoration from nonscientists rests arguably on a certain Edenic image of a pleasant, visually breathtaking, quite innocuous landscape; sort of like Disney World’s version of Yosemite in its “Wilderness Lodge.” As one local politician puts it, the restoration project “gives Mother Nature the opportunity to do some work and restore herself, and Mother Nature will respond with majesty” (cited in Bair 1994).

Given the post-industrial alienation from nature, popular support for increasing biodiversity or ecological restoration would seem to be quite volatile, based more on these Edenic dreams than on a thorough understanding of ecosystems. But the debate about ecological restoration can also be taken to a higher level of sophistication. There are at least two responses to the very idea of the human restoration of non-human nature that need to be addressed by ecologists themselves. First, from the arguments justifying projects like the Kissimmee restoration, it appears entirely possible to determine objectively a base ecosystem from the pre-degradation past that can be used to provide an appropriate model for ecological restoration. Yet, how far back into the past do ecologists need to look for such a base? How far back was there a non-human produced nature along the Kissimmee River? If the nature we seek to restore was also produced, what makes this nature better than that which exists now? What, in other words, is the “authentic” ecosystem that should be restored? As one opponent of the Kissimmee River project points out:

The ecosystem that existed prior to the channelization for the river is gone. In its place another ecosystem has evolved. Now the government and the environmentalists not only want to put it back the way it was, but to put it the way it might be, based on a computer simulation of probabilistic one in one-hundred year rainfall and
The restoration scenario also presumes considerable knowledge of the history of species interaction as the means to restore the proper species to their proper roles in the proper order. Not surprisingly, there is a quite healthy debate in the literature concerning the validity of all of these assumptions (Sprugel 1991; Luken 1990; Aronson, Dhillion and Le Floc'h 1995).

A more significant problem with this view of ecological restoration and management involves the very notion of ecosystem. In recent years, many more ecologists have cast a critical eye on this idea of ecological community or system. This new ecology suggests that nature is not a community of communities as much as it is a veritable mosaic of different species processes and relationships. This conception goes way beyond the traditional difficulty of defining the borders of ecosystems—that is, the question of spatial scale—to criticize the very notion of system. Worster (1995:73-74) neatly summarizes this increasingly popular view of nature. As he puts it, the new message in ecology is that:

the old ideal of equilibrium is dead; the ecosystem has receded in usefulness; and in their place we have the idea of the lowly “patch.” Nature should be regarded as a landscape of patches of all sizes, textures, and colors, changing continually through time and space, responding to an unceasing barrage of perturbations.

Worster clearly is perturbed himself about this new development that he, and others, significantly associate with the recent post-modern turn in science. From his point of view, the loss of the notion of ecosystem means a loss of an essential holistic lens through which ecological health can be determined. What is left is an image of a very disorderly, rapidly changing nature that is difficult to conceive in its entirety. Elsewhere, Worster even suggests that the new ecology is playing into the hands of those who would legitimize the further degradation of nature on the basis of the new mantra: “change and disturbance is natural” (Worster 1994: 1993).

Yet there are others, like Botkin (1990), who believe this new view of nature actually provides a better base for conservation practice, precisely because it moves away from such static notions
as equilibrium and ecological climax. Viewing nature as a mosaic of different processes with unequal rates, and diverse patterns, of change renders the ecologist’s lens that much more discerning. Such a view appropriately emphasizes the diversity of nature and natural evolution. And it is here, especially, that the parallels with contemporary social theory are most apparent.

For the specific purposes of this paper, the importance of this post-modern view of nature rests in what it implies for the case-studies. Clearly, imagineered Disney-Nature on Discovery Island cannot be dismissed anymore as ersatz simply because it does not constitute an ecosystem. Here, indeed, is the basis for Worster’s concerns about the new ecology. Yet, Disney-Nature can be criticized from the point of view of post-modern ecology precisely because ecological change is not allowed to happen. What change does take place takes place only because humans allow it to. From this point of view Disney-Nature is ersatz and even detrimental because it impedes natural evolution.

Similarly, the Kissimmee Restoration project can be upheld as providing more ecological benefits because it does provide non-human nature the opportunity to evolve. Put differently, the project ideally restores a nature that will not be as actively managed by humans, which of course raises the stakes of uncertainty and ultimate danger to humans. In short, judgements about what kinds of imagineering are more ecologically sound than others are not impossible to make even though it must be recognized that there exists many different notions of what authentic, or real, “nature” might be.

**Who is to be the Gardener?**

There is an increasing concern among conservationists and others concerned with global nature that humans need to take a more active management role. Virtually all of the chapters of a recent edited textbook on conservation biology emphasize the necessity of such concerted action in order to save the natural world from total destruction (Meffe and Carroll 1994). Soulé (1991) has even called the current global situation a “constant crisis” for conservationists, necessitating direct action even in the context of uncertainty or the lack of perfect knowledge. There is a growing perception, in other words, that because non-human nature is being
disturbed by humans at ever increasing rates, it is up to other humans to protect nature as much as possible.

Significantly, a recent article on this notion of managing nature for ecological integrity suggests that:

There is room for choice in the kinds of ecosystems with integrity that humans might prefer. In human-dominated ecosystems, it really is a matter of: “What kind of garden do we want? What kind of garden can we get?... Forecasts of future ecosystems are not possible, but some future imaging of preferred ones is (Regier 1993:16).

As another author from this same collection puts it, ecological integrity is really “about our sense of the wholeness and well being of ecological systems and, in this, must reflect our sense of what we value in them” (Kay 1993:203).

The question, it seems to me, is not whether nature is to be managed by humans, it clearly already is and has been for a very long time. Rather the question is how nature is to be managed. The post-industrial imagineering of nature is a process with a dynamic that springs from the continuing process of capitalist accumulation. It is, in turn, a process which alienates increasing numbers of people from non-human nature. In this context, what is natural is merely relative, actively imagineered for ease of consumption. Disney-Nature, in this sense, is as real as any other non-human nature.

The alternative to this mode of natural management would be to produce nature to conform as closely as possible to natural processes. That is, instead of producing nature for pure entertainment value, this alternative mode would seek to produce a nature that is based on ecological history and imbued with a future that may be unforeseeable, yet, at the same time, inevitable given evolutionary processes. The Kissimmee River restoration project is a good example of this, but it must be underscored that a project such as this must be sold to folks increasingly ignorant of natural evolutionary processes. That the restoration will cost hundreds of millions of dollars which otherwise might be spent on schools, roads, and even prisons, makes it all the more necessary for ecologists to be aware of this ever widening social context in which they argue their case.

In the starkest terms, the question is who is to be the gardener: Disney or the ecologist. But this is not the same lament as Soule’s
tirade against city people. The twist in the present argument is that, if the ecologist is to be the gardener, she will have to elicit a veritable cultural revolution in post-industrial societies if her message is to be heard, let alone absorbed and acted upon. Disney's imagined nature seems just as good, indeed, even better than anything the ecologist has to offer, particularly because this nature can be enjoyed without giving up any of the comforts of the city. And this, I think, is what portends the worse for the future of nature and, then, our species.

REFERENCES


The Pentagon and the Sunshine State

Barney Warf
Florida State University

Military expenditures exert enormous impacts on regional economies throughout the nation (Malecki 1984; Cypher 1985; O'hUallachain 1987; Browne 1988; Kirby 1992; Hall and Markusen 1992; Warf and Glasmeier 1993). Many communities—most notoriously, southern California—are addicted to the flows of Pentagon contracts that have sustained them for decades. Markusen (1986) argues that Pentagon spending acts as a form of "military Keynesianism" enhancing the economic and spatial restructuring of the U.S. economy. This issue has become increasingly important in light of the end of the Cold War and subsequent reductions in military expenditures.

Numerous authors have demonstrated that U.S. military expenditures are highly unequally distributed geographically. The most pronounced pattern in this regard is the Pentagon's persistent tendency to favor states in the west and south, i.e., the Sunbelt, at the expense of traditional midwestern and northeastern regions, i.e., the Rustbelt and Frostbelt (Mayer and Downs 1983; Employment Research Associates, 1986). The Pentagon bias in favor of the Sunbelt largely reflects the aggressive efforts of Southern and Western politicians to procure Pentagon funds and the Air Force's reliance upon the wide open spaces of the western U.S. for flight training grounds. In addition, Sunbelt economies have demonstrated markedly more dynamism than those in the Rustbelt and Frostbelt, especially in vital sectors such as electronics.

This paper examines the magnitude, sectoral composition, spatial distribution, and employment impacts of Pentagon prime contracts (those over $25,000) awarded to firms in Florida in 1993. Prime contracts account for roughly 30 percent of total Defense Department outlays and do not include salaries for military personnel. Second, it estimates the economic impacts of these contracts using a regionalized input-output model, extending the analysis to include employment by industry and occupation. Third, it ad
addresses the issue of base closures in Florida in the 1990s. The conclusion points briefly to the policy implications of the findings.

**Sectoral and Spatial Patterns of Florida Prime Contracts**

In 1993, the military awarded $5.37 billion in prime contracts to Florida firms, or about four percent of the $125 billion the Pentagon awarded in that year. The geographical distribution of these contracts (Figure 1) reveals concentrations along the Atlantic coast, particularly in Brevard and Palm Beach counties (the Cape Canaveral region). On the Gulf Coast Pinellas County stands out.

![Diagram of Florida showing concentration of prime contracts](image)

**Figure 1**
Total Prime Contracts
The interior and northern parts of the state, in contrast, received significantly smaller volumes.

The distribution of prime contracts varied markedly among different branches of the armed forces. Of the total prime contract volume, more than half ($2.89 billion, or 53.8 percent) were allocated by the Air Force. Air Force contracts were concentrated mostly in Brevard and Palm Beach counties (Figure 2). The Army awarded $1.29 billion (23.9 percent) to Florida's firms, primarily to those located in Orange county (Figure 3). Finally, prime contracts from the Navy, which awarded the smallest volume of the three branches ($1.0 billion, or 19.5 percent), were located in Jacksonville (Duval County), Brevard, Orange, and Pinellas counties (Figure 4).
The Pentagon's expenditures in Florida were highly unevenly distributed by industry. Roughly $4.7 billion (88 percent) were allocated to manufacturing, while $640 million (12 percent) were allocated to services of various sorts. The aerospace industry, which received almost $2 billion in contracts (37 percent of the total), constituted the single largest recipient by sector. In this respect, Florida resembles other regions of the U.S. that receive significant shares of Pentagon funding, such as southern California. Figure 5 portrays the geography of prime contracts for four major sectors. Aerospace contracts, the largest in terms of awards by industry ($1.99 billion), were located overwhelmingly in the Orange and Brevard county "space coast" region. Contracts for electronics
equipment, the second largest recipient ($1.2 billion, or 23.3 percent), were concentrated in Volusia and Palm Beach counties. Contracts to shipyards ($37.6 million, 0.7 percent) were found overwhelmingly in the Jacksonville area, while those to universities ($23.7 million, 0.4 percent) were primarily to Embry Riddle, a flight-training school in Orange county.

Assessing the Economic Effects of Prime Contracts

Prime contract spending has several effects on Florida's economy. The methodology employed here to estimate these impacts consisted of a regionalized input-output model. Input-
output analysis (I-O) analysis estimates the impacts of changes in the final demand—the prime contracts to firms in the state—including the direct, indirect, and induced effects that occur through the multipliers associated with inter-industry linkages and the expenditures of wages and salaries (Miller and Blair 1985). The model assumes linear production functions, the absence of economies of scale, and infinite elasticities of input substitution. The essential I-O approach states that total production equals intermediate output plus local final demand:

$$\Delta x = RAX + RY, \text{ where} \quad (1)$$

$$\Delta x = a \text{ column vector of changes in output by industry generated by prime contracts to Florida,}$$
A = a matrix of fixed inter-industry technological relations
derived from the Bureau of Economic Analysis' RIMS II model,
R = a diagonal matrix of Location Quotients of employment by
industry designed to estimate leakages due to inter-regional
subcontracting (see below), and
Y = a column vector of final demand consisting of the prime
contracts in Florida in 1993 disaggregated by industry.
The economic impacts of prime contracts are thus a function of their
volume and sectoral distribution and the capability of Florida’s
economy to provide the requisite inputs necessary to generate the
appropriate outputs.

An important issue here is the spatial distribution of subcontracting.
To the degree that prime contractors in Florida subcontract
with firms located in other states, the analysis minimizes the local
economic impacts of military contracts. Unfortunately, the Pentagon
stopped releasing data on military subcontracting in 1979; hence,
analyses of prime contracts must estimate subcontracting patterns
indirectly. In this analysis, the ability of Florida to provide the
inputs necessary to generate prime contract outputs is estimated
through a matrix (R in equation one above) of Location Quotients of
employment by industry (LQ); a LQ greater than unity, indicating a
local specialization in that sector, indicates sufficient capacity to
generate the output locally, i.e., that no subcontracting out of
Florida occurred; conversely, an LQ less than one indicates less
specialization in Florida than the national average and a cor-responding
regional import of input i, reducing the volume and hence
associated employment impacts. Conversely, to the extent that
Florida firms subcontract with prime contractors located in other
states, this analysis underestimates the total impacts of military
expenditures on the state’s economy.

The I-O estimates of changes in output by industry attributable
to prime contracts were transformed into changes in associated
employment levels, \( \Delta e \), by premultiplying the vector of changes in
industry output, \( \Delta x \) (derived from equation 1), by a matrix of
employment-to-output coefficients for each industry, N:

\[
\Delta e = N \Delta x.
\]  

Finally, changes in the occupational composition of employment
generated by these contracts were estimated using a rectangular
matrix of coefficients, E, representing the allocation of twelve
occupational groups among the industries of the I-O model. The
relation between changes in sectoral output, \( \Delta x \), employment by
industry, \( N \), and associated occupations is:

\[
\Delta o = E N \Delta x, \text{ where } \quad (3)
\]

\( \Delta o \) = a column vector of changes in employment by occupation in Florida.

**Results**

Altogether, military prime contracts to Florida generated a total of $11.2 billion in output and 215,866 jobs, which comprised approximately three percent of the state's total employment (Table 1). The impacts of these contracts were highly unevenly distributed by industry. Among industries, the primary beneficiaries were aerospace ($2.4 billion in output, 42,000 jobs) and electronics ($2.3 billion, 43,000 jobs), a reflection of the large direct effects generated by the contracts awarded to those sectors. In employment terms, other industries relatively heavily affected included miscellaneous manufacturing (23,300 jobs), metal products (15,700), wholesale trade (8,900), and maintenance and repair services (8,900).

When defense employment is assessed on the basis of occupations rather than industries, a severe imbalance is evident between jobs generated by prime contracts and the distribution characteristic of the national economy as a whole (Table 2). Prime contracts generate roughly the same proportion of jobs for managers, secretaries, and transportation workers as the national labor market. However, they create six times as many positions for engineers as does the nation, but only one-fourth as many jobs for other types of professionals. Such an observation clearly reflects the engineering-intensive nature of many prime contracts. Equally important, Florida military expenditures create more than twice the proportion of positions for skilled craft workers and 1.5 times the expected number of unskilled operators and laborers. In sum, prime contracts generate markedly more positions for engineers and blue collar workers than the entire economy and relatively fewer clerical and service positions. These results pointedly indicate that the labor markets beholden to the Pentagon differ from those in the civilian economy in terms of their skill and educational levels. Indeed, in an era that has seen the widespread substitution of relatively well-paying manufacturing jobs by low-paying service ones, prime contracts are an important force stemming the tide of blue collar employment decline.
### Table 1

**Output and Employment by Industry Generated by Prime Contracts to Florida, 1993**

<table>
<thead>
<tr>
<th>Sic</th>
<th>Output Sector</th>
<th>Output ($ mill.)</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-14</td>
<td>Primary activities</td>
<td>61.8</td>
<td>854</td>
</tr>
<tr>
<td>15-17</td>
<td>Construction</td>
<td>231.1</td>
<td>5,320</td>
</tr>
<tr>
<td>20-21</td>
<td>Foods and tobacco</td>
<td>94.9</td>
<td>805</td>
</tr>
<tr>
<td>22-23</td>
<td>Textiles</td>
<td>88.7</td>
<td>2,235</td>
</tr>
<tr>
<td>24-25</td>
<td>Wood products, furniture</td>
<td>77.1</td>
<td>1,557</td>
</tr>
<tr>
<td>26</td>
<td>Paper products</td>
<td>141.9</td>
<td>1,800</td>
</tr>
<tr>
<td>27</td>
<td>Publishing</td>
<td>82.2</td>
<td>1,833</td>
</tr>
<tr>
<td>28</td>
<td>Chemicals and allied products</td>
<td>151.6</td>
<td>1,243</td>
</tr>
<tr>
<td>29</td>
<td>Petroleum and byproducts</td>
<td>497.4</td>
<td>2,669</td>
</tr>
<tr>
<td>30</td>
<td>Rubber and plastic</td>
<td>189.7</td>
<td>4,103</td>
</tr>
<tr>
<td>31</td>
<td>Leather and footwear</td>
<td>7.1</td>
<td>240</td>
</tr>
<tr>
<td>32</td>
<td>Stone, clay, and glass</td>
<td>57.5</td>
<td>1,059</td>
</tr>
<tr>
<td>33-34</td>
<td>Metal products</td>
<td>1,177.0</td>
<td>15,707</td>
</tr>
<tr>
<td>35-36</td>
<td>Electronic equipment</td>
<td>2,318.7</td>
<td>43,278</td>
</tr>
<tr>
<td>371</td>
<td>Automobiles</td>
<td>28.1</td>
<td>221</td>
</tr>
<tr>
<td>372</td>
<td>Aircraft</td>
<td>2,404.5</td>
<td>41,998</td>
</tr>
<tr>
<td>373</td>
<td>Ships and other trans. equip.</td>
<td>45.4</td>
<td>882</td>
</tr>
<tr>
<td>38</td>
<td>Scientific equipment</td>
<td>51.9</td>
<td>1,042</td>
</tr>
<tr>
<td>39</td>
<td>Misc. manufacturing</td>
<td>1,014.3</td>
<td>23,384</td>
</tr>
<tr>
<td>40-42</td>
<td>Land transportation</td>
<td>150.8</td>
<td>3,710</td>
</tr>
<tr>
<td>44</td>
<td>Water transportation</td>
<td>56.3</td>
<td>603</td>
</tr>
<tr>
<td>45</td>
<td>Air transportation</td>
<td>376.6</td>
<td>6,055</td>
</tr>
<tr>
<td>47</td>
<td>Transportation services</td>
<td>25.9</td>
<td>879</td>
</tr>
<tr>
<td>48</td>
<td>Communications</td>
<td>98.9</td>
<td>1,718</td>
</tr>
<tr>
<td>49</td>
<td>Utilities</td>
<td>221.0</td>
<td>1,238</td>
</tr>
<tr>
<td>50-51</td>
<td>Wholesale trade</td>
<td>378.7</td>
<td>8,983</td>
</tr>
<tr>
<td>52-57</td>
<td>Retail trade</td>
<td>18.6</td>
<td>972</td>
</tr>
<tr>
<td>58</td>
<td>Eating/drinking establishments</td>
<td>118.9</td>
<td>6,059</td>
</tr>
<tr>
<td>60-66</td>
<td>F.I.R.E.</td>
<td>274.2</td>
<td>4,084</td>
</tr>
<tr>
<td>70</td>
<td>Hotels and motels</td>
<td>60.0</td>
<td>3,758</td>
</tr>
<tr>
<td>731</td>
<td>Advertising</td>
<td>15.4</td>
<td>339</td>
</tr>
<tr>
<td>734</td>
<td>Maintenance</td>
<td>215.1</td>
<td>8,922</td>
</tr>
<tr>
<td>Industry</td>
<td>Employment 1982</td>
<td>Employment 1983</td>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------</td>
<td>-----------------</td>
<td></td>
</tr>
<tr>
<td>Computer services</td>
<td>70.5</td>
<td>1,832</td>
<td></td>
</tr>
<tr>
<td>Automobile rental &amp; repair</td>
<td>38.5</td>
<td>607</td>
<td></td>
</tr>
<tr>
<td>Entertainment</td>
<td>11.1</td>
<td>306</td>
<td></td>
</tr>
<tr>
<td>Medical services</td>
<td>4.9</td>
<td>206</td>
<td></td>
</tr>
<tr>
<td>Legal services</td>
<td>27.5</td>
<td>626</td>
<td></td>
</tr>
<tr>
<td>Education and training</td>
<td>27.8</td>
<td>1,711</td>
<td></td>
</tr>
<tr>
<td>Nonprofit agencies</td>
<td>88.7</td>
<td>6,327</td>
<td></td>
</tr>
<tr>
<td>Engineering &amp; architecture</td>
<td>122.2</td>
<td>3,116</td>
<td></td>
</tr>
<tr>
<td>Accounting</td>
<td>28.6</td>
<td>552</td>
<td></td>
</tr>
<tr>
<td>Federal government</td>
<td>37.6</td>
<td>1,853</td>
<td></td>
</tr>
<tr>
<td>State and local government</td>
<td>32.2</td>
<td>794</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>112,241.8</strong></td>
<td><strong>215,866</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: calculated by author.

a. Agriculture, forestry, fishing, mining
b. Freight forwarding, etc.
c. Finance, insurance, and real estate.
d. Roofing, janitorial services, sanitation and waste removal, landscaping.
e. Public and private, including universities.

**Base Closures in the Sunshine State**

In addition to prime contracts, another important dimension of Florida prime contracts concerns military facilities in the state slated for closure. In the post-Cold War era, reductions in military expenditures are widely expected. Of these efforts, attempts to close military facilities (including Army and Air Force bases, shipyards, depots, training and research centers, hospitals, laboratories, etc.) are significant. The primary incentive motivating such efforts is cost savings, including reductions in military and civilian personnel and expenditures for maintenance. The Defense Department often has sought to close bases (frequently rendered strategically obsolete by new military technologies) in the hopes of using the funds thus released elsewhere. Such efforts invariably evoke enormous opposition from affected areas, generally under the ruse of national security.
Table 2

Occupational Distribution of Employment Generated by Florida Prime Contracts, 1993

<table>
<thead>
<tr>
<th>Occupation</th>
<th>U.S. (%)</th>
<th>% Florida jobs Generated by Prime Contracts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managers</td>
<td>11.6</td>
<td>9.4</td>
</tr>
<tr>
<td>Engineers</td>
<td>1.2</td>
<td>8.1</td>
</tr>
<tr>
<td>Other Professionals</td>
<td>14.1</td>
<td>3.1</td>
</tr>
<tr>
<td>Sales Brokers</td>
<td>4.3</td>
<td>5.8</td>
</tr>
<tr>
<td>Secretaries</td>
<td>6.3</td>
<td>5.6</td>
</tr>
<tr>
<td>Other Clerical</td>
<td>15.6</td>
<td>11.9</td>
</tr>
<tr>
<td>Unskilled Sales</td>
<td>12.0</td>
<td>8.4</td>
</tr>
<tr>
<td>Health, Education, Welfare</td>
<td>6.7</td>
<td>2.5</td>
</tr>
<tr>
<td>Construction</td>
<td>4.9</td>
<td>3.0</td>
</tr>
<tr>
<td>Transportation</td>
<td>3.2</td>
<td>2.9</td>
</tr>
<tr>
<td>Craft Workers</td>
<td>8.2</td>
<td>21.6</td>
</tr>
<tr>
<td>Operators and Laborers</td>
<td>12.1</td>
<td>17.7</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: calculated by author.

Recent base closure attempts have been implemented since 1987 through the Commission on Base Realignment and Closure (CBRAC) (Schmitt 1993). Subject to approval by Congress as a whole, facilities on the Commission’s list can be shut down by the Pentagon without observing the time-consuming and expensive rules that hindered such closures in the 1970s. In 1988, three facilities in Florida were slated by CBRAC for closure; in 1993, seven facilities were put on the list, including Homestead Air Force Base. Florida was spared from any closures in the latest implementation effort, which began in 1995. Communities located near such facilities, especially in rural areas with few other job-generating institutions, widely expect rising rates of unemployment and other repercussions as the full impacts of such closures unfolds.
The closure of such facilities, however, may be a blessing in disguise. Former military bases can be converted to a variety of alternative purposes, including industrial buildings, piers and cargo handling structures, power plants, housing, shopping centers, landing strips, and golf courses. Indeed, because such activities generally are more labor intensive and have higher multiplier effects than military activities, they can in the long run generate more employment than bases themselves. For example, the conversion of Kincheloe Air Force Base, in Chippewa, Michigan to an industrial park and medium security prison created three times as many jobs as did the Pentagon (Laubernds 1988). Thus, base closures can generate long term benefits while incurring short run costs.

Concluding Comments

These findings have important policy implications. Given possible impending reductions in the military’s budget, including probable closures of bases, it is likely that such communities will also bear the brunt of the costs of dislocation. The “space coast” region centered on Brevard county appears to be particularly vulnerable in this regard. The sensible strategy to maximize the state’s long term economic health, it would appear, is to accelerate the conversion of military-dependent firms for production geared to civilian markets, retrain workers, and develop new competitive niches. Many of these new activities are likely to exhibit higher employment multipliers than military ones, and in the long run lead to significantly improved employment levels.

REFERENCES


Warf

The Pentagon and the Sunshine State


High Tech, Mickey Mouse, and Oranges: The Development and Coexistence of the Military–Space Industry and Tourism in Central Florida

Edward J. Malecki
University of Florida

Central Florida comprises a very unusual mix of agriculture, high-technology industry, and tourism. No other region in the USA, except California, has such a combination of sectors. This paper looks primarily at two metropolitan areas: Orlando and Melbourne-Titusville-Palm Bay, which comprise a contiguous area in Central and East Central Florida (Figure 1). The paper begins with a brief historical look at the area — brief in part because the economic history of the region is so recent. The next section focuses briefly on citrus fruit production, a mainstay of the local economy until only recently. This is followed by a discussion of the space and defense industry, a high-technology sector that is the base of manufacturing in the region. The tourism industry, focused on Walt Disney World, is described as the atypical economic base of the Central Florida region. Finally, transportation links related to the tourism complex are discussed.

Hyper-Growth: A Brief Recent History of the Region

Prior to the Second World War, Central Florida was among the least-populated parts of the state. Two groups contributed to rapid statewide population growth: those who looked upon the state as a haven for retirement and ex-military personnel who had been stationed here during the war. These two sets of newcomers produced massive population growth. During the 1940s Florida’s population increased from 1,897,414 to 2,777,305, a gain of almost 50%. Ten years later, in 1960, Florida had 4,951,560 people; by 1990 it was the nation’s fourth largest state, with a population of 12,937,926 (Keuchel 1990: 104-105).

Retirees affect the economic base of the state in several ways. Because most retirees do not work, but instead consume local services based on transfer income from pensions, savings, and
federal Social Security, the portion of Florida's economy in the services is the highest in the United States, and the percentage of employment in manufacturing is among the lowest (Table 1). Georgia, located just north of Florida, represents a more "typical" southern state with its reliance on manufacturing, while Arizona, perhaps most similar to Florida, still does not match the post-industrial character of Florida.

The state's economy began to reflect the shift from a rural to an urban state only in the 1960s. Instead of relying upon agriculture, forestry, fishing, and minerals as it long had, the state's economy began moving toward manufacturing and technology, largely on the
basis of branch plants of corporations headquartered in the North. Of the 10 largest manufacturing firms in Florida in 1970, only one had been in operation before the war (Keuchel 1990: 105-108).

Florida's economy remains highly unusual relative to the nation as a whole. Manufacturing as an employment sector accounts for only 10.9%, vs. 18.7% nationwide. Services and wholesale & retail trade, by contrast, together employ 54.1% of the Florida labor force, higher than the 47.2% for the nation (Fik et al. 1991). The post-industrial appearance is reinforced both by retirement migration and by tourism, both of which remain critical to the Florida economy. However, inland Central Florida only recently became the tourism center of the United States. Prior to 1970, tourism was associated with the warm coastal areas of Miami and Fort Lauderdale on the Atlantic coast, and Clearwater, St. Petersburg and Tampa on the Gulf of Mexico, where the over-65 population remains based.

**Oranges: The Central Florida Citrus Industry**

As a subtropical region, Florida is one of only three areas in the USA where citrus production is possible; the others are the California-Arizona region and South Texas. The fruit was introduced in all three areas by the Spaniards. Along with many other tropical crops,
citrus trees — including oranges, grapefruit, and lemons, as well as hybrids such as tangelos — can grow only where the temperature stays above freezing. Not only is the current crop damaged in the event of a freeze but, if it is severe, the trees may be damaged or killed. Indeed, the northern boundary of citrus production is a good indicator of climatic change (Weischet and Caviedes 1987). This boundary has been shifting southward throughout the past few decades but, until very recently, viable citrus production has always encompassed the Central Florida area. Indeed, production data for 1960 show that Lake County and Orange County, where Orlando is located, ranked second and third in Florida in citrus production (Raisz and Dunkle 1964).

The recent nature of the change is seen in Table 2, which shows orange production in a five-county area of Central Florida as well as that for Florida as a whole since the 1964-65 production year (citrus fruit ripens in the winter and generally is picked between November and March). Until the mid-1970s, the 5-county region accounted for at least one-fourth, and often as much as one-third, of the total orange production in the state. Orange production peaked in 1974-75 at 173,000 boxes (each holding about 24 kilograms of fruit). Lake County typically accounted for about half the 5-county total, usually followed by Orange County. However, beginning in the 1978-79 season, winter freezes began to affect the region with devastating results. A major freeze in that year resulted in a nearly 50% reduction in the orange harvest and, although it rebounded somewhat in the early 1980s, a series of freezes for several years from 1982-85 all but wiped out production in the region. These freezes were the worst since 1899, and have moved the northern boundary of active citrus production well to the south (Weischet and Caviedes 1987: 225).

Since the freezes, nearly 26,000,000 citrus trees (oranges, grapefruit, and other hybrids) were planted from 1988 to 1990, especially more cold-hardy varieties (Bush 1990). The new groves are being planted much more intensively, containing at least 140 trees and sometimes up to 200 trees per acre, compared to the 50-75 trees in the groves killed by the freezes (Koenig 1988: 60). New citrus trees have been planted almost exclusively in the southern part of Florida, and the Central Florida region has accounted for no more than 10% of the state’s total crop for the past decade (Bush 1991: 8).

The demand for Florida citrus, especially oranges, boomed after the development of frozen juice concentrate in 1946. However, a
The Florida Geographer

Table 2
Citrus Production in Florida and Selected Central Florida Counties, 1964-65 to 1989-90 (in thousands of boxes)

<table>
<thead>
<tr>
<th>Year</th>
<th>Brevard</th>
<th>Lake</th>
<th>Orange</th>
<th>Osceola</th>
<th>Seminole</th>
<th>Florida Total</th>
<th>Central Florida as % of Florida</th>
</tr>
</thead>
<tbody>
<tr>
<td>1964-65</td>
<td>2,100</td>
<td>14,380</td>
<td>9,601</td>
<td>1,782</td>
<td>1,646</td>
<td>82,400</td>
<td>35.8%</td>
</tr>
<tr>
<td>1966-67</td>
<td>2,883</td>
<td>24,046</td>
<td>16,523</td>
<td>2,917</td>
<td>2,794</td>
<td>144,500</td>
<td>34.0%</td>
</tr>
<tr>
<td>1967-68</td>
<td>2,781</td>
<td>12,288</td>
<td>7,979</td>
<td>1,585</td>
<td>1,401</td>
<td>100,500</td>
<td>25.9%</td>
</tr>
<tr>
<td>1969-70</td>
<td>3,127</td>
<td>21,499</td>
<td>12,810</td>
<td>2,889</td>
<td>2,319</td>
<td>137,700</td>
<td>31.0%</td>
</tr>
<tr>
<td>1970-71</td>
<td>3,625</td>
<td>20,644</td>
<td>12,757</td>
<td>2,717</td>
<td>2,268</td>
<td>142,300</td>
<td>29.5%</td>
</tr>
<tr>
<td>1972-73</td>
<td>4,298</td>
<td>23,853</td>
<td>13,592</td>
<td>3,211</td>
<td>2,324</td>
<td>169,700</td>
<td>27.9%</td>
</tr>
<tr>
<td>1974-75</td>
<td>3,848</td>
<td>26,194</td>
<td>14,374</td>
<td>3,498</td>
<td>2,180</td>
<td>173,300</td>
<td>28.9%</td>
</tr>
<tr>
<td>1978-79</td>
<td>1,812</td>
<td>11,969</td>
<td>5,793</td>
<td>1,794</td>
<td>1,081</td>
<td>91,000</td>
<td>24.7%</td>
</tr>
<tr>
<td>1981-82</td>
<td>2,612</td>
<td>16,066</td>
<td>7,305</td>
<td>2,204</td>
<td>1,048</td>
<td>125,800</td>
<td>23.2%</td>
</tr>
<tr>
<td>1983-84</td>
<td>1,900</td>
<td>9,950</td>
<td>4,500</td>
<td>2,315</td>
<td>825</td>
<td>116,700</td>
<td>16.7%</td>
</tr>
<tr>
<td>1984-85</td>
<td>1,700</td>
<td>0</td>
<td>0</td>
<td>1,600</td>
<td>0</td>
<td>125,800</td>
<td>2.6%</td>
</tr>
<tr>
<td>1985-86</td>
<td>1,894</td>
<td>0</td>
<td>0</td>
<td>889</td>
<td>0</td>
<td>119,000</td>
<td>2.3%</td>
</tr>
<tr>
<td>1986-87</td>
<td>2,513</td>
<td>1,241</td>
<td>2,091</td>
<td>1,452</td>
<td>170</td>
<td>119,700</td>
<td>6.2%</td>
</tr>
<tr>
<td>1987-88</td>
<td>2,703</td>
<td>1,787</td>
<td>2,524</td>
<td>3,914</td>
<td>205</td>
<td>138,000</td>
<td>8.1%</td>
</tr>
<tr>
<td>1988-89</td>
<td>2,767</td>
<td>2,915</td>
<td>3,862</td>
<td>3,805</td>
<td>310</td>
<td>146,600</td>
<td>9.3%</td>
</tr>
<tr>
<td>1989-90</td>
<td>1,955</td>
<td>573</td>
<td>866</td>
<td>3,303</td>
<td>122</td>
<td>110,200</td>
<td>6.2%</td>
</tr>
</tbody>
</table>


A shift in consumer demand in the 1970s toward chilled, bulk, ready-to-serve juice has opened the market for new competition. Frozen concentrate’s share of US orange production dropped from 77% in 1971 to 46% by 1987 (Jackson 1988). Severe weather during the past decade added to the challenges confronting orange producers. The citrus market is an international one. Orange plantations in Brazil also have replaced Florida groves as a source for much of the supply of orange juice concentrate, led by Coca-Cola Company, one of the major juice producers in the USA. Brazilian juice, transported in tankers to storage facilities in California, Delaware, and New York, also typically is shipped as concentrate, and “reconstituted” by mixing with water at processing plants (Jackson 1988). Because 90%
of Florida's orange production is sold as juice, mostly as frozen concentrate, both market shifts and foreign international competition profoundly affect Florida citrus producers. Some juice is imported from Brazil, and packaged in Florida, mainly to meet "made in USA" requirements. Brazil is one of the few competitors with Florida in the orange juice market; fruit from other citrus-growing countries, such as Israel, Mexico, Argentina, and South Africa, is rarely processed into juice. The major Brazilian juice market is Europe, but exports to the USA have increased since the mid-1980s (Koenig 1988). Thus, oranges have become a minor part of the region's economy. Other crops, including horticultural plants, remain significant but, to a large degree, the area has given way to the space and defense industries and, more recently, to tourism.

High Tech in the Sunbelt: The Space-Defense Industry

Space technology brought a new dimension to Florida. Cape Canaveral became the primary port for missile launching when, at the end of World War II, the federal government began to look for suitable test sites for the nation's missile program. Missile testing at Eglin Air Force base, in the Florida panhandle, started in October 1944 with the launching of captured German V-1 "buzz bombs." Testing continued for air-to-air missiles such as the Sidewinder and for intermediate-range ground-to-ground missiles such as the Matador, but new facilities were needed for long-range intercontinental missiles. The first launching from Cape Canaveral was made in July 1950. Within ten years, over $400 million was spent on the Cape complex, and 17,000 people were employed on the launching pads and in the laboratories (Keuchel 1990).

The Cape complex was among the first examples of the "military-industrial complex." The missile launch area was the responsibility of the Air Force, which had its headquarters at Patrick Air Force base. The various manufacturers of the missiles and their components — Martin, Boeing, Lockheed, Northrop, North American, Convair, Westinghouse, General Electric, Avco, and Rocketdyne — all had test facilities at the Cape. Pan American Airways and the Radio Corporation of America (RCA) were responsible for the operation and management of the launching site and tracking stations. The National Aeronautics and Space Administration (NASA) incorporated the Cape complex into the nation's space program during the Kennedy administration, naming the complex
the Kennedy Space Center in the president's honor after his death (Keuchel 1990: 108-109). The designation of Cape Canaveral as the site of the nation's space launch center also "brought Californian conditions to Florida" (Weaver and Anderson 1969: 190). High-technology manufacturing began to replace agriculture, and the region was irremediably transformed (Holman 1974; Weaver and Anderson 1969).

Manufacturing industries associated with or compatible with the missile and space programs moved into Florida. RCA, Honeywell, Milgo Electric, Sperry Microwave Electronics, and others moved to Florida in order to make components for communications, radar, and missiles (Keuchel 1990: 109). Many firms located outside the Central Florida area, in more urban settings, perhaps because the "employment absorption capacity" in the vicinity of the Space Center was considered "poor," both because of the numbers of in-migrants and because there were few other alternative skilled jobs (Holman 1974: 239). One of the new industries, The Martin Company (later Martin Marietta and now Lockheed Martin), which located in Orlando in 1957 to manufacture missiles and electronics, was to become the state's largest manufacturing operation. In 1965 Martin employed 8,000 people in the development and production of weapons, including missiles for the Navy, the Air Force and the Army. The proximity of Orlando to Cape Canaveral was a factor in the decision of Martin to locate in Florida. But what was more important, according to a company official at the time, was the high quality of life, favorable climate, and access to recreational facilities available to its employees in Florida. The other major defense firm in the area, Harris Corp. in Melbourne, primarily makes radar equipment. Both firms are diversifying away from military goods as defense budgets are being reduced (Hersch 1991).

The lack of other manufacturing means that high-technology sectors — most of them defense-related — accounted for 42% of all manufacturing jobs in Florida in 1982 (Fishkind 1983). The Orlando-Cape Canaveral area, locally called "the Space Coast," is one of three major concentrations in Florida of high-tech industry; the others are the southeast coast from Miami north to Palm Beach, and the Tampa-St. Petersburg area on Florida's west coast. A number of spin-off firms have evolved from the space-defense contractors in the Space Coast area, especially in laser and electro-optic industries. Many of the 30 firms now in the Orlando area owe their origin to early research and development (R&D) by Martin Marietta, which
developed early lasers for missile guidance. The newer firms have branched out of missile applications into other industrial, military, and medical uses (Hansen et al. 1990; Selz 1985). An additional 10 laser and electro-optic firms are located in the Melbourne area south of Cape Canaveral. The 40 firms employ about 10,400 workers.

Industrial firms have led the R&D, backed by NASA and Pentagon contracts, and only in 1987 did the University of Central Florida establish a Center for Research in Electro-Optics and Lasers (CREOL) (Hansen et al. 1990: 10-13). The University of Central Florida has concentrated on engineering and computer science, and remains relatively specialized. In 1979 the university opened a research park that is ranked 18th among successful research parks in the USA in a recent assessment (Luger and Goldstein 1991: 62). However, with or without the research park, the firms in the area appear to have formed a critical mass, and local input-output linkages are at a relatively high level in comparison to the rest of the state (Hagey and Malecki 1986; Hansen et al. 1990).

The dominance of defense-related high technology is evident in Table 3, which lists the major employers in Central Florida (Orlando Sentinel 1992a). Six of the top 20 employers, and ten of the top 50, are defense and space-related firms or government facilities. The largest military employer, Martin Marietta, is also the largest R&D performer for the US Department of Defense. The shift to R&D from manufacturing has resulted in a reduction of the firm’s work force in Orlando by 6,000 jobs since 1986 (Orlando Sentinel, 1992b). Approximately 10% of NASA’s total budget is spent in the Brevard County area, employing over 18,000 workers in 1988 (Braun 1990). That employment base also is threatened by reductions in support for the manned space station and a reduction in Space Shuttle missions.

It is uncertain how the reductions in military spending will affect Central Florida over the long term. Military spending has been the base of Florida’s high-technology economy, and the state has ranked fifth (behind California, Texas, New York, and Massachusetts) in defense contracts (Hulse 1987; Olster 1985). Employment cutbacks, such as those at Martin Marietta, are likely to continue, and could spawn a series of high-tech spin-offs as engineers seek local opportunities in a shrinking pool of employers. Indeed, this would be the greatest legacy of the Cold War era for Florida in the 21st century. However, the largest of all employers in
Table 3
Largest Employers in Central Florida (includes Brevard, Lake, Orange, Osceola, Seminole, and Volusia Counties)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Employer</th>
<th>Total Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Walt Disney Corp.</td>
<td>35,000</td>
</tr>
<tr>
<td>2</td>
<td>Harris Corp. (D)</td>
<td>10,250</td>
</tr>
<tr>
<td>3</td>
<td>Publix Super Markets</td>
<td>9,333</td>
</tr>
<tr>
<td>4</td>
<td>Martin Marietta (D)</td>
<td>9,000</td>
</tr>
<tr>
<td>5</td>
<td>Winn-Dixie</td>
<td>8,865</td>
</tr>
<tr>
<td>6</td>
<td>Florida Hospital</td>
<td>7,337</td>
</tr>
<tr>
<td>7</td>
<td>Lockheed (D)</td>
<td>6,400</td>
</tr>
<tr>
<td>8</td>
<td>ITT Corp.</td>
<td>5,800</td>
</tr>
<tr>
<td>9</td>
<td>American Telephone &amp; Telegraph</td>
<td>5,500</td>
</tr>
<tr>
<td>10</td>
<td>K Mart</td>
<td>4,865</td>
</tr>
<tr>
<td>11</td>
<td>Orlando Regional Medical Center</td>
<td>4,570</td>
</tr>
<tr>
<td>12</td>
<td>Orlando Management Sectional Center</td>
<td>4,124</td>
</tr>
<tr>
<td>13</td>
<td>General Mills</td>
<td>4,100</td>
</tr>
<tr>
<td>14</td>
<td>Sears, Roebuck and Co.</td>
<td>4,089</td>
</tr>
<tr>
<td>15</td>
<td>McDonnell Douglas (D)</td>
<td>3,900</td>
</tr>
<tr>
<td>16</td>
<td>Marriott Corp.</td>
<td>3,624</td>
</tr>
<tr>
<td>17</td>
<td>Universal Studios Florida</td>
<td>3,500</td>
</tr>
<tr>
<td>18</td>
<td>Pizza Hut</td>
<td>3,200</td>
</tr>
<tr>
<td>19</td>
<td>EG&amp;G (D)</td>
<td>3,100</td>
</tr>
<tr>
<td>20</td>
<td>Kennedy Space Center (D)</td>
<td>2,700</td>
</tr>
<tr>
<td>20</td>
<td>Wal-Mart</td>
<td>2,700</td>
</tr>
<tr>
<td>22</td>
<td>Sprint</td>
<td>2,600</td>
</tr>
<tr>
<td>23</td>
<td>University of Central Florida</td>
<td>2,511</td>
</tr>
<tr>
<td>24</td>
<td>Davgar (restaurants)</td>
<td>2,400</td>
</tr>
<tr>
<td>25</td>
<td>SunTrust Banks Inc.</td>
<td>2,340</td>
</tr>
</tbody>
</table>

(D) indicates defense or space-related employer

Central Florida — by far — is Walt Disney Corporation at its multiple theme park tourism complex.

**Mickey Mouse: Manufactured Tourism**

In a state largely built to attract tourists, tourism continued to be Florida’s most important industry in the years after the Second World War. In 1950, 4.7 million tourists visited the state, most travelling by rail to the Miami area. That figure more than doubled to 10.8 million in 1960. Miami was still the dominant destination, as suggested by the fact that Dade County contained 34% of the state’s hotel and motel rooms (Winsberg 1988). Tourism more than doubled again to 23.1 million in 1970. Automobile travel had supplanted railroads during the 1950s and 1960s. Reflecting the desire of Americans to travel by car, 80% of the 1970 tourists came to the state in their own autos and only 18% by commercial plane. Florida was still the “American tropics,” within relatively easy driving distance for two-thirds of the US populace. The bulk of these tourists, moreover, were families who took their vacations during the summer months. Thus, it was the air-conditioned facilities, which became standard after the war, that made it possible for summer tourists to enjoy their stay (Keuchel 1990: 115). Air-conditioning also helped to enhance Florida’s attraction to retirees.

Service industries, many of them associated with the state’s tourism, are dominant in Florida’s economy. Also because of the low-wage jobs in tourism services, the population is much younger in Central Florida than the state average; only 10.6% of Orange County’s population is 65 years or older, compared to the state average of 18.3%. Affordable housing for a population that is disproportionately comprised of women and teenagers has been a special problem. The land boom has raised the prevailing rents above what families on service-sector wages can afford.

The dominant hub of Central Florida tourism is Walt Disney World, which covers 42.86 square miles (about the size of San Francisco and twice as big as Manhattan) south of Orlando. The land was acquired (secretly) in 1964-65 by dummy corporations. The Walt Disney Company also obtained complete planning authority over its land, dubbed the Reedy Creek Improvement District. One major job was to make more of the land usable land, since 75 percent of which would normally be under water during the summer (Fjellman 1992: 187).
Prior to the appearance of Disney World, Central Florida had a few "natural" attractions, including Cypress Gardens to the south and Silver Springs to the north, both boasting gardens, alligators, and other native charms. Since 1970, an array of manufactured sites, such as Sea World, Wet 'n Wild, Universal Studios, and Busch Gardens, and a host of smaller, short-visit attractions has opened to attract tourists (and their money).

A visitor to Walt Disney World quickly senses the economic impact of big business in the entertainment field. The opening of EPCOT (Experimental Prototype Community of Tomorrow) Center added to the appeal of this massive tourist complex. The Orlando area was the principal destination of the 36.7 million tourists who visited Florida in 1988. Of these, over two-thirds visited Walt Disney World. Not making the mistake that was made in Disneyland in Southern California, the firm bought a vast tract of land in Florida, allowing it to develop hotels, shopping complexes, and golf courses, as well as three separate theme parks. There are now 15,000 rooms on the Disney property alone (and at least that number in the surrounding area owned by other firms), more than in the Bahamas (Elliott 1991: 22). This hotel space has made Orlando a convention and conference destination as well, especially in the off-season when hotel space is readily available. The recent nature of the tourism boom in Central Florida is evident in the shift in hotel space. In 1970, Orange County had only 5,512 hotel and motel rooms, a number which soared to 40,062 by 1987; Osceola County, especially the area immediately adjacent to Walt Disney World, increased from 480 to 17,887 rooms. During the same period, Miami's Dade County lost over 9,000 rooms, declining from 63,738 to 54,459 (Winsberg 1988).

Linkages to local suppliers are quite extensive, one gathers anecdotally, including crafts from local craftspeople sold to Disney gift shops, plants from nearby Apopka growers, and life-size (and larger-than-life) displays from Museum Services Inc., of Gainesville. Overall, however, the economic impact of Walt Disney World and Central Florida tourism is small. Tax revenue (primarily a sales tax, a hotel 'bed tax' and gasoline tax) has not kept up with the pace of growth and demands on infrastructure. The low-wage jobs generate a multiplier effect estimated at only 1.1 (Fjellman 1992: 140).

The Disney complex now includes the Magic Kingdom, EPCOT Center, and the Disney-MGM Studios. Together, they attracted 30.2 million visitors ("guests" in Disney language) in 1992, more than
twice the 11.6 million at the Disneyland park in Southern California. Universal Studios Florida, which opened in Orlando in 1989 to compete against the Disney-MGM Studios, drew an additional 6.7 million (Jefferson 1992). The Kennedy Space Center’s Spaceport USA also is a major tourist destination, drawing 2.9 million visitors in 1988 (Braun 1990).

Initially, the market for the Disney resort was meant to be only America’s east coast. Now, observers estimate that at least 15% of the 28.4 million Disney visitors in 1990 were from overseas. The average length of stay is nearly a week (Elliott 1991: 22). Even the recent opening of the Euro Disney park outside Paris is not likely to reduce demand for the Florida complex, just as Tokyo Disneyland, which opened in 1983, had no apparent effect. Neither park can offer the warm climate of the Florida Disney complex, nor the full ensemble of attractions, including EPCOT and Disney-MGM Studios, not to mention the competing attractions in the Central Florida area.

Competition for tourists is keen, and Walt Disney World ranks just behind Spain as the top tourist destination in the world (Elliott 1991). As one observer describes the magnitude of the complex: After nearly 10 years, in early 1981, Disney World had had over 126 million visitors, placing Central Florida among the top tourist attractions in the world, surpassing the Eiffel Tower, Taj Majal, Tower of London, Egyptian pyramids, and Disneyland, in the total recorded attendance (Fjellman 1992: 139).

The competition among theme parks means that, each year, newer and more elaborate spectacles, rides, and attractions must open. Walt Disney World has added at least one major attraction each year (Fjellman 1992: 135-136; Jefferson 1992). This form of manufactured tourism, which Disney has perfected, now sets the global standard for tourist destinations.

The Transportation Connection

Tourism in Central Florida would never have flourished without an expansion of transport facilities. The area was largely isolated from the Atlantic Coast railroads and the tourism flows they facilitated during the 1920s. The interstate highway network facilitated car travel to Central Florida, but still restricted the market
to the range of feasible driving distance. Even in the age of air travel, the Florida peninsula remains far from the North American population centers to the north, and foreign tourists found that flights to Miami still required four to five hours by car after arrival. Thus, an expansion of direct air connections to Orlando was deemed essential to the region's economic growth. Table 4 illustrates the phenomenal increase in air traffic following expansion of Orlando International Airport. From a small facility far behind competing cities of Miami and Tampa-St. Petersburg, Orlando overtook Tampa by the mid-1980s and now nearly matches Miami in air passengers, despite the Miami urban area's nearly double population advantage and status as the "capital of Latin America." While still not on a par with major traffic hubs such as Atlanta or Chicago, Orlando has become a "large hub" in the Federal Aviation Administration's airport classification. Moreover, Orlando's airport offers more flights daily than comparable cities — currently well over 200 — compared to 70 from Jacksonville, a city of similar size but without the tourism attractions (Ivy 1991).

### Table 4

**Airport Enplanements at Major Florida and U.S. Airports, 1966-1989**

<table>
<thead>
<tr>
<th>Year</th>
<th>Orlando</th>
<th>Miami</th>
<th>Tampa-St. Petersburg</th>
<th>Atlanta</th>
<th>Chicago (O'Hare)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1966</td>
<td>303,083</td>
<td>2,575,337</td>
<td>929,559</td>
<td>4,655,316</td>
<td>10,236,434</td>
</tr>
<tr>
<td>1970</td>
<td>486,201</td>
<td>3,607,234</td>
<td>1,422,022</td>
<td>8,194,371</td>
<td>13,221,253</td>
</tr>
<tr>
<td>1975</td>
<td>1,475,859</td>
<td>4,683,269</td>
<td>2,290,901</td>
<td>12,294,599</td>
<td>15,904,449</td>
</tr>
<tr>
<td>1980</td>
<td>3,124,568</td>
<td>8,136,235</td>
<td>3,600,730</td>
<td>19,994,113</td>
<td>19,228,725</td>
</tr>
<tr>
<td>1985</td>
<td>4,848,771</td>
<td>7,717,685</td>
<td>4,009,979</td>
<td>20,678,085</td>
<td>21,510,371</td>
</tr>
<tr>
<td>1989</td>
<td>7,373,449</td>
<td>8,591,936</td>
<td>4,409,261</td>
<td>20,397,697</td>
<td>25,664,266</td>
</tr>
</tbody>
</table>


The international influx of visitors to the area has given rise to innovative schemes for transporting them around the region. Proposals for monorail and maglev (magnetic levitation) trains and
other high-speed options are in the works to connect air passengers to the Walt Disney World complex, the Kennedy Space Center on the Atlantic Coast, and to the tourist hotels on International Drive (Fjellman 1992: 147-148; Longman 1991). None of these would be feasible or even contemplated without the tourism industry and its millions of passengers.

Conclusion

The Central Florida region boasts state-of-the-art tourism, which in many respects has come to dominate the region. Less prominent to tourists, but no less significant to the local economy, is the high-technology sector, dependent on military and space-related funding from the federal government. Both of these industries have eclipsed the long-dominant citrus fruit agriculture which has fallen to both natural causes (freezes) and speculation, as tourism opened opportunities for land to be converted to housing, shopping, and other service uses.

The pressures of competition are felt in all three sectors. The North American Free Trade Agreement between Canada, Mexico, and the United States is feared by Florida farmers as likely to shift fruit and vegetable production to Mexico, where land and labor costs are much lower. This is less likely in the case of citrus fruit in the short term, since the trees take several years to mature. Yet the risk remains that oranges and grapefruit will retain their importance in Florida for little more than the rest of the decade.

High-technology industries in Florida, because of their dependence on defense and space budgets, are vulnerable to international developments as well as to policy needs and fashions. The conversion from military to civilian products has been difficult for most, if not all, defense firms. The “easy” response is simply to reduce employment radically, as Martin Marietta has done. The more difficult response is to revamp company strategy to identify new markets, such as transportation, alternative energy, and the environment (Markusen and Yudken 1991: 208-260).

Competition in tourism is perhaps more predictable but, as in other sectors, there may well be limited demand to divide among a growing number of producers. In any event, the Central Florida region is poised to capture a significant portion of global tourism — at least the manufactured kind — for a decade or more to come. We
have little experience yet with this type of post-industrial economy, or with what it will bring to future generations.

REFERENCES


Paynes Prairie: Biography of a Wetland

Christopher Meindl
University of Florida

Introduction

Controversy surrounding the fate of wetlands across the nation has generally focused on issues such as property rights, wetland boundaries and benefits wetland ecosystems provide humankind. Connections between wetland systems are frequently lost in the debate. Also faded from view is the historical perspective of wetlands. Yet an understanding of the historical significance of a given wetland ecosystem can sharpen the focus on the major issues and reduce misunderstandings commonly associated with wetlands preservation efforts.

The case of Paynes Prairie (see Figures 1, 2 and 3) is an example of a wetland system with a long, productive and fascinating history. Viewing Paynes Prairie from the historical perspective allows one the opportunity to explore many of the interconnections between wetlands and people. Although the prairie is currently engulfed in controversy, much of the problem stems from the failure of many people to understand the biography of this wetland.

Indian and European Occupation

Paynes Prairie has been inhabited for nearly 13,000 years (Milanich 1992). Indeed, traveling through the area in 1774, naturalist William Bartram noticed that “almost every step we take over these fertile heights, [one] discovers the remains and traces of ancient human habitations and cultivation” (Van Doren 1928: 173). In 1492, Europeans stumbled into the West Indies and in 1539, Spanish explorer Hernando DeSoto met and fought with the prairie’s natives. During the 1600s, Spaniards erected a series of missions throughout north Florida including one in what later became Alachua County. By 1700, Paynes Prairie had become the site of one of the most successful cattle ranches in Florida (Armade 1961). This success was short-lived because British and Indian raids
between 1702 and 04 practically eliminated both Spanish and Timucuan Indian presence in all of north Florida. Spanish officials soon moved to fill the void by inviting branches of the Creek Indians from the Carolinas to relocate in Florida and to develop farms and cattle ranches of their own. These newcomers eventually became known as Seminoles (Blackard 1992).

In 1821, Spain ceded Florida to the United States and Edward M. Wanton established a trading post near the prairie's southern edge at Micanopy (Figure 2). This marked the beginning of the end for the Indian presence in and around Paynes Prairie. Incoming settlers refused to recognize Indian land claims, conflict between cultures intensified, and the Second Seminole War broke out in 1835 (Mahon 1967). By 1842, Indians had either been eliminated or chased deep into the Everglades.

Paynes Prairie, or “Alachua Savanna” as Bartram called it, has been settled by Europeans and Indians alike largely because it has
been an excellent source of food. Bartram was struck by the numerous orange groves and vegetable gardens in the vicinity. "At the same time", he recorded, "are seen innumerable droves of cattle. . . . Herds of sprightly deer, squadrons of the beautiful fleet Seminole [sic] horse, [and] flocks of turkeys" (Van Doren: 165). Remnants of the "Alachua Trail" that leads into Georgia reveal that other Indians in the south also recognized the value of Alachua Savanna as a source of trade (Vanderhill 1977).

Whence "Alachua" and "Paynes"?

There are several conflicting accounts of the name Alachua (Drew 1927; Gainesville Daily Sun, 1932; McDonald 1934; Norton
1892; Quigg 1958) but most early writers believe that Alachua is a derivative of an Indian word meaning big jug or bottomless pit. The natives were well aware that Alachua Sink is a hole in the limestone that allows surface water to drain into the subterranean water system. While on a mission to locate a suitable territorial capital for Florida in 1823, W.H. Simmons visited the sink and asked one of his Indian guides where the subterranean outlet reappeared. After being told that the water eventually entered the Suwannee River some 45 miles away, Simmons asked why they thought this was the case. The guide told him that “some years ago, an Indian bathing near the sink was drowned and his body afterwards found in the Suwannee” (Simmons 1908).

The origin of the name Paynes Prairie is also not entirely clear. Bartram referred to the area as Alachua Savanna and that name stuck until sometime in the early 1800s (Van Doren 1928). Although there are three prominent early nineteenth century people with the last name of Payne, most writers claim that the prairie is named after King Payne—an Indian chief killed in a skirmish with invad-
Paynes Prairie Turned into a Lake?

It seems clear that water levels in Paynes Prairie have changed throughout history. William Bartram noticed that the savanna went through relatively wet and dry cycles on an annual basis. Commenting on the "intolerable stench" of rotten fish, Bartram recorded his surprise that the prairie had been relatively dry during early summer rather than in autumn by which time he supposed the summer sun would have evaporated most of the water (Van Doren 1928). Although some sources state that Paynes Prairie was at least partially flooded during the 1820s, other sources do not support this allegation. In 1891, the Providence Journal (as quoted in Sellards, 1910) reported that Paynes Prairie had been a lake which had drained in 1823. Yet James Grant Forbes makes no mention of water level changes in the Alachua section of his book describing Florida in 1821 (Covington 1964). Furthermore, W.H. Simmons apparently heard no such stories from the Indians when he visited the prairie in early October, 1823 (Simmons 1908). Finally, E.H. Sellards (1910) reported that James Pierce visited the basin in 1824 and found it dry.

On the other hand, W.W. Cameron claimed that the water level was "very low" in 1861, implying that a lake existed (Sellards 1910). The Providence Journal also alleges (as quoted in Sellards 1910: 64) that the prairie became flooded in 1868, "but that the water disappeared after a short time. . . ." Continuing, the newspaper reported that "in 1873, after a series of heavy rains, the Sink overflowed" and "soon became a lake." Sellards (1910), however, is not sure if the prairie overflowed in 1871 or 1873. Yet this much is certain: Paynes Prairie flooded soon after the Civil War and became a lake that ran between 9 to 13 km (6 to 8 mi) east and west, and 3 to 6 km (2 to 4 mi) north and south. Even after the prairie became a lake, naturalist Frank M. Chapman wrote this in his journal for 10 December 1887: "The greatest change I notice in the appearance of the country since my departure in the spring has been caused by the drouth [sic] which lowered the lake and has left thousands of acres uncovered where before the water was waste high" (Austin 1967: 29). Paynes Prairie remained a lake until 1891 when it suddenly drained. Water
levels in Paynes Prairie obviously fluctuate over both long and short terms.

Agricultural Development around the Lake in the Late 1800s

By 1870, shortly before Paynes Prairie became Alachua Lake, Alachua County was the most populous in Florida. This was due in no small measure to productive farm and ranch land that would soon be under several meters of water—the same productive land that Indians had settled for millennia. In the early 1870s, John Barr planted 16 ha (40 acres) of orange trees on his Micanopy farm and was immediately denounced as a fool by his friends. According to one source, residents scoffed that "there were not enough people in the United States to eat that many oranges" (Barr as quoted in Smith, 1942: 2).

Although wild orange trees dotted much of the Sunshine State, Florida and California had not yet become tremendous citrus producing states. The U.S. imported over 200 million oranges between 1874 and 1877 (Jackson 1991). By 1880, only six Florida counties produced more oranges than Alachua County’s 15,000 boxes (U.S. Department of the Interior 1883). (James Calvert Smith [1942] reports that fruit packers preferred boxes containing 150 oranges). Alachua County farmers also produced almost half of Florida’s total value of market garden products sold. Suddenly, Alachua County lakes were surrounded with citrus trees. By 1889, only Orange and Marion counties produced more oranges than Alachua’s 400,000 boxes. (U.S. Department of the Interior 1895).

James Calvert Smith (1942) recalled that until the 1880s, grapefruit were considered unpleasant anomalies in orange groves. Yet when Henry Flagler opened his fabulous Ponce de Leon Hotel at St. Augustine in 1886, grapefruit appeared on the breakfast menu. Smith records (p. 4) that northern tourists returned home, raved about the new fruit, and soon "a grapefruit tree was worth ten orange trees."

Although a railroad linked Gainesville to Jacksonville and northern markets beginning in 1859, transportation throughout Alachua County remained woefully inadequate during the 1870s (Watkins 1975). By 1883, however, the Alachua Navigation and Canal Company launched a steamboat nearly 10 m (32 ft) long into Alachua Lake. The boat chugged all around the lake, stopping to
pick up passengers and produce, and delivering them to a railroad connection near Rocky Point on the lake’s west shore (Lauter 1950). It seemed as if prosperity would be permanent.

The Big Freeze

In 1883, Carl Webber raved about Alachua County’s mild climate and went so far as to compare greater Gainesville to the biblical Garden of Eden. “Figs grew there, and figs grow here. Because the people here do not resort to the fig leaf clothing after the fashion of our primitive ancestors, is no proof that the climate is not sufficiently charming to admit of such a luxury” (Webber 1883: 5). During the winters of 1894-95 and 1898-99, however, Alachua County’s residents would need to wear much more than just fig leaves.

Evidence of freezing temperatures in Alachua County during the winter of 1894-95 is sketchy. Smith (1942) recalled that it got down to -3°C (26°F) one night in December 1894, and that although citrus trees were damaged, they were still alive. Yet according to a bulletin published by the University of Florida’s Agriculture Experiment Station (Mitchell and Ensign 1928), the mercury at Gainesville dropped to -9°C (16°F) or less for three days during the winter of 1894-95. Smith (1942) did not record the temperature for January or February 1895, but he observed that most citrus trees were “killed to the ground.”

Many citrus farmers lost everything they had. Some of the wealthier growers moved further south, but several replanted in Alachua County. On 7 February 1899, the temperature in Gainesville rose to 27°C (81°F). It seemed as if winter was over and that danger of a freeze had passed. The next night, however, the temperature plunged to 2°C (36°F). The following night it dipped to -4°C (25°F). Over the next three days low temperatures were near freezing and highs hovered ominously around single digits celsius (40°F to 50°F).

If residents of Gainesville thought the worst had passed, they were sadly mistaken. On 13 February disaster struck. The temperature dropped to -14°C (6°F). The next day was hardly any better with a low of -10°C (13°F) and a high reaching only -5°C (22°F). Gainesville received an inch of snow and even southwest Florida reported flurries (U.S. Department of Agriculture 1899). The winter of 1899 ended Alachua County’s hope of rebuilding an economy.
based on citrus and vegetable farming. In 1910, Alachua County produced just 26,000 boxes of oranges while Orange County produced 915,000 boxes (U.S. Department of Commerce 1913).

Alachua Lake Becomes Paynes Prairie—Again

Even before the big freezes of the 1890s, attention once more focused on the agricultural potential of Paynes Prairie, this time as a source of range land for cattle. Alachua Lake lowered noticeably during 1890, and in August of 1891, the sink gobbled up what was left of the lake in a matter of days (Sellards 1910). The steamboat was marooned. Countless thousands of fish lay rotting in the mud. Townspeople were flabbergasted. On 20 August 1891, the Gainesville Daily Sun reported that “two large new sinks have appeared near the old one... This is another proof, it would seem, that the underground outlet is a reality, though we hear many seriously saying that they disbelieve it.” Years later Ida McDonald (1934: 17) wondered “whether it was blasting that a company was doing around the sink” that caused the lake to drain. This hypothesis notwithstanding, the draining of Alachua Lake remains a mystery.

In any case, the steamboat has never been found, the fish were eventually removed (or decomposed), and prairie grasses soon returned. With the grasses came cattle. By 1920, with Alachua County’s dreams of a citrus empire nothing but a faded memory, the county led Florida in the value of all domestic animals—largely attributable to fine pastures on Paynes Prairie (U.S. Department of Commerce 1922).

In an article dated 12 November 1911, the Gainesville Daily Sun noted that W.N. Camp owned more than 8,000 ha (20,000 acres) in Paynes Prairie and that he hoped to drain the entire tract. The newspaper editorialized that “The plans of Mr. Camp, when carried out, will mean much for this section.” Six years later, nothing had become of the project, but the Sun sensed renewed interest: “Some believe that by turning Prairie Creek [the chief source of water for the prairie] into the River Styx the water level [in the prairie] can be reduced materially [see Figure 2]. If this territory can be reclaimed thousands of acres of land as rich as any in the Everglades will be brought into cultivation” (Gainesville Daily Sun 1917). Interest in the project again waned, this time until 1926, when the Micanopy Chamber of Commerce spoke out against the resurrected drainage project (Gainesville Daily Sun 1926). By 1931,
however, as Camp's Canal neared completion, the Sun reported that the water level "is now receding at the rate of 12 inches about every 15 days and that within 60 days the prairie will be completely dry except at the famous sink" (Gainesville Daily Sun 1931). Shortly thereafter, a series of levees were constructed throughout the prairie so that even more cattle could be raised in the lush grasses.

**Camp's Canal Becomes the Center of Controversy**

Overflow from Newnans Lake runs into Prairie Creek and the creek used to drain into Paynes Prairie (Figure 2). For nearly 30 years after the creation of Camp's canal, however, water from Prairie Creek collected in a semi-impounded area on the northeast edge of Paynes Prairie; it then ran south down Camp's Canal which emptied into a marsh called the River Styx which gradually released water further south into Orange Lake. By 1957, however, Orange Lake had shriveled to one-third of its size in previous years, possibly because of the flow of water into a known sink at the bottom of the lake, aggravated by drought conditions. Worried local residents sent a diver into the lake to see if water was pouring through the sink. The diver soon reappeared and claimed that water was indeed being sucked into a subterranean outlet (Gainesville Sun 1993a).

In an effort to prevent any further drainage of Orange Lake, panic-stricken locals deposited as many as 100 old cars, a bus body, and a huge fuel tank into the sinkhole. The hole appeared to be plugged and water levels soon returned to "normal"—at least for a time. In the early 1970s, a relatively dry Paynes Prairie became a state-owned and managed wildlife preserve. The Florida Department of Environmental Protection (DEP) is trying to restore the prairie to a semblance of its prior wetland condition. To do this, the state placed a culvert through the impoundment at the head of Camp's Canal so that some of the water from Prairie Creek can follow its pre-1931 natural course—into Paynes Prairie (Gainesville Sun 1993a).

According to Paynes Prairie biologist Jim Weimer, rainfall has been below normal for much of the 1980s and Orange Lake has again begun to shrink at an alarming rate (Weimer pers. comm.). As seen in Figure 4, precipitation at Gainesville, Florida has fluctuated wildly since the early 20th century. In any event, many recreation-related businesses and houses that sprung up along the old lake shore are now high and dry. In spite of the fact that Orange Lake's
sink is again draining water and that precipitation has again become scarce, many Orange Lake residents are furious with the DEP for allowing water to flow into the prairie. Paynes Prairie Park Manager Jack Gillen maintains that the state is simply allowing water to go where topography would send it naturally, and that in any event there has been precious little water to send to either Orange Lake or the prairie (Gillen pers. comm.).

In any case, the St. Johns River Water Management District responded to public pressure in 1992 by requiring the state to obtain a temporary permit to “divert” water into the prairie. Although the prairie now consumes less water than permitted, staff members at Paynes Prairie are concerned that the water management district might reduce future water flow into the park. Relations between prairie supporters, Orange Lake supporters, and water management district officials are extremely volatile and there appears to be little hope for immediate agreement (Gainesville Sun 1993b).

Conclusion

Human beings throughout the world have always modified their environment and former residents of Paynes Prairie are no exception. Spanish settlers introduced cattle and oranges to coastal
Florida during the 16th century and Paynes Prairie Indians made extensive use of cattle and wild citrus fruit over the next few centuries. Furthermore, early 20th century issues of the Gainesville Daily Sun are peppered with suggestions for how the prairie might be altered (Gainesville Daily Sun; 1903, 1911, 1917, 1919). Yet lack of resources and inadequate technology forced people to accept a more limited modification of nature.

Perhaps it is precisely because we now have the resources and technology to alter nature that people are more inclined to implement changes in natural systems. Many Orange Lake residents have built their lives around a frequently changing body of water and insist upon monopolizing water resources at the expense of Paynes Prairie. It remains to be seen if Paynes Prairie will be sacrificed in the name of saving Orange Lake residents who insist that they have a right to extract well being from such a dynamic system.

Note: This article is a revision of a similar piece which appeared in a field trip guidebook (Mossa 1993) available to participants at the Annual Meeting of the Florida Society of Geographers in 1993.

REFERENCES


Gainesville Daily Sun. 20 August (1891), 4:3.
Gainesville Daily Sun. 7 April (1903), 2:1.

Gainesville Daily Sun. 12 November (1911), 1:5.


Gainesville Daily Sun. 27 July (1931), 1:5.


Florida’s Bahamian Connection

Glenn Anderson
Independent Scholar

“Culturally distinct settler groups almost always maintain...some elements of their homeland cultures, at least for a few generations” (Castles and Miller 1993)

A massive exodus of Loyalists from British East Florida (peninsular Florida) to the Bahamas and other destinations occurred at the close of the American Revolution. Thousands of white Loyalists, together with their slaves, chose to relocate to the nearby islands where they could return in the event of favorable circumstances. The Loyalist exodus initiated a process which eventually transformed coastal Florida.

Bahama Loyalists began to drift back to East Florida and southern Georgia almost immediately after the British evacuation of East Florida. They came singly, like John Wood (1752-1829), now resting on the grounds of St. Marys Presbyterian Church on the Georgia shore, or in groups, like the white fishermen of Riviera Beach, or the Black migrants to the Lower East Coast, who labored on great construction projects in the early years of the twentieth century (Parrish 1940 to 1953; Cate 1956). The movement, modified by United States immigration laws, continues to this day and is responsible for many groups in Florida with links to the Loyalist past.

The process was sometimes complex. Georgia historically played a major role in peopling the peninsula. Return to southern Georgia frequently served as only one stage of the migration process. Camden County, in the days of communication by water, had a key role, because that part of Georgia had a common history and cultural identity with East Florida (Smith 1983).

Riley (1983) mentions 3,000 return migrants from the Bahamas to southern Georgia. Many of those migrants must have entered through St. Marys, the closest port in Georgia to the Bahamas, and a large percentage of them probably made Camden County their
home, as argued by Smith (1983). Later, as the focus of economic activity shifted, those migrants were subjected to the “pull” of a developing Florida. Westward of Camden County lay the inhospitable Okefenokee, eastward the Atlantic, northward established populations, but, only about thirty miles to the south, Jacksonville developed as the “Gateway City” to Florida. Like the Bahamas, Camden County was, for many Loyalists and their descendants, a way-station on the road to Florida.

Blacks sailed to the plantation islands of the Bahamas with their Loyalist masters and shared many common values. They were an integral part of the Loyalist march through history. Some had ties of blood with their former masters, but even more shared the thrift, industry, and ambition of the restless white Loyalists. The Bahamian Blacks really constituted a subgroup of the Southern Loyalist population (Saunders 1983). Their subsequent migration to Florida reintroduced Loyalist traditions to parts of the Lower East Coast.

Mack Walker (1964 in Scott, 1968), in his examination of German immigration to the United States, emphasizes the factors of economic marginality and income fluctuations as catalysts for the early immigration of relatively prosperous, modern, skilled, and educated people. The first stream of return migrants from the Bahamas easily conformed to the paradigm (Kershaw 1978). Cotton’s precipitous decline in the Bahamas and the relaxation of governmental restrictions in East Florida prompted the re-settlement of Volusia’s plantation country. Men with capital, education, and ambitious plans were the first to realize the limitations of the Bahamas environment and to establish the initial Bahamian immigration networks in Florida (Strickland 1963).

The seafaring peoples who settled the Florida Keys in the 1830’s also proved the validity of Walker’s paradigm. One or two generations removed from the earlier planter migrants, they were of more moderate means than the earlier Loyalist subgroup, but possessed resources superior to those who came later. Poorer white fishermen at Riviera Beach and the Black migrants to the Lower East Coast represented the next logical extension of that trend.

The Sugar Plantations

With the retrocession of Florida to Spain, most of the British colonists withdrew and these estates were abandoned. About the turn of the century
Spanish immigration policy became more liberal, and numerous loyalist refugees...were induced to return...the economic development of this short stretch of the upper east coast exceeded that of any other part of the territory... (Boyd 1951)

The re-development of the sugar plantations south of St. Augustine, around the turn of the century, became the most important, and perhaps the only, agricultural innovation during the second Spanish period. Failed Bahamian cotton planters formed the driving force behind this form of economic activity. The sugar plantations continued to be the most successful and significant Florida centers of agricultural production until their destruction by the Indians and their Black allies in the Second Seminole War. The end came in the winter of 1835/1836 (Strickland 1963).

Both capital and labor proved essential for this industry. The Loyalist planter elite of the Bahamas possessed those key resources, but struggled to utilize them efficiently in the Bahamas because the field of economic opportunity seemed too limited. East Florida offered greater potential, was well known to the Loyalists, and was close-at-hand. Under those circumstances and with the change in attitude of the Spanish colonial administration, represented by the laws of 1788 and 1790, a return migration of some of the Bahamian planters appeared almost inevitable (Rutherford 1952). Need, proximity, and opportunity dictated the time and direction of that movement. Further, it involved the development of a well remembered area and the revival of former British plantations.

Although the number of white immigrants remained small, their economic and social impact loomed large, and they brought many slaves with them. The tradition of heavy investment in commercial agriculture initiated during the British period was maintained and enhanced by this development. Additionally, the introduction of large numbers of Blacks to East Florida's population, which also began during the British period, continued and its demographic consequences can be seen today (Strickland 1963). Both the focus of modern peninsular Florida's agriculture and the composition of the state's population appeared foreshadowed and influenced by this Loyalist migration.

Florida's state park authorities have identified sixteen plantation sites in a narrow coastal strip, no more than a few miles wide, starting at the Bulow plantation, now included in the southernmost
portion of Flagler County, in the north, and running to just south of New Smyrna Beach (signs posted by park authorities). Boyd (1951) had earlier named fifteen possible plantation locations in the same area, but sixteen is now the accepted figure. Bulow Creek, the Halifax Creek and River, the Tomoka River and Basin, and the Indian River North provided a secure, connected network of tidal waterways, protected by the coastal barrier island and accessible from the Atlantic at Ponce de Leon Inlet, near New Smyrna Beach. Bulk cargoes moved easily and cheaply along this network and the coastal lands provided a richer environment for agriculture than the sterile interior (Strickland 1963).

New Smyrna developed as an independent center because its natural transportation network dictated that approach (de Braham 1971). When the Loyalists returned, those geographic realities remained. An enclave type structure reflected communication directly with the sea and relatively important links with the Bahamas. Convenient access by water to the Bahamas became an important factor in this population movement, but it also played the same role for all other Bahamian settlements in Florida.

These riverine plantations were very large, although only part of the total acreage was actually cultivated. For example, John Russell, who immigrated from the Bahamas, received a grant of 4,000 acres which his heirs sold in 1821, the year Florida became an American possession, to Charles W. Bulow of Charleston, South Carolina, founder of Bulow plantation (Strickland 1963). The three hundred Bulow slaves cultivated 1,000 acres of sugar cane, 1,200 acres of cotton, and some food and fodder crops (Tebeau 1971).

Robert McHardy’s plantation on the Tomoka of 1,762 acres was another Loyalist enterprise with ties to the Bahamas. He had worked for his brother’s Nassau mercantile firm before moving to Florida. When his wife died, McHardy sent his Florida-born son to Nassau to be educated, which he soon left to join the Royal Navy. These ties of family and culture with the Bahamas and Britain remained common on the Loyalist plantations of East Florida (Strickland 1963).

Captain James Ormond I, former employee of Panton Leslie and Company and former cotton planter from the island of Exuma in the Bahamas, developed a 2,000 acre plantation at the head of the Halifax River. Although his wife and son Emanuel returned to Scotland on his death, in the 1820’s credit problems encouraged the family’s return to the plantation. The oldest son, James Ormond II,
left Britain so quickly that he had to send for his wife and four children. James’s wife, the former Isabella Chrystie, was probably a part of the famous Bahamas’ Loyalist family of the same name (Strickland 1963).

General Samuel Williams, the descendant of a wealthy British family, received a large grant on the present site of Daytona Beach. Williams’s widow later married Joseph M. Hernandez, a name famous in Florida history. The old Loyalist’s estate passed to his wife, four children in Florida, and his illegitimate daughter in the Bahamas (Strickland 1963).

Sugar constituted the most successful crop produced by this small, cohesive elite, but cotton remained almost as important. They were Florida’s two most important commercial crops. Corn was grown for domestic consumption and every plantation had stone hand-mills to grind grist. Industrious slaves had time to tend their own small plots, and to hunt and fish. However, only the impressive ruins of the steam sugar-mills survive to mark this way-of-life (Strickland 1963).

The Keys

With Florida ceded to the United States by the treaty with Spain, the way was open for actual permanent colonization of the lower Florida coast by the Bahamas. By the 1830s, the Conchs and their tiny settlements along the Keys and coast had grown perceptibly. By the time of the War Between the States, the migration had reached proportions of a colonization (White and Smiley 1959).

In 1831, there were 12,259 Blacks in the Bahamas, representing three-quarters of the population, and 9,268 of them were slaves. August 1, 1834, the day slaves won their freedom in the British Empire, seemed a day of agony for the Loyalists with their harsh racial attitudes because they were confronted with a potential threat to their position. It became yet another factor encouraging a wave of immigration to Florida. This time the immigrants came from a humbler strata of society (Cration 1986).

American annexation of Florida in 1821 had been the initial factor strengthening the “pull” of the peninsula for the maritime
people of Abaco and its satellites. The island environment of the Florida Keys, so similar to the Bahamas, had provided a refuge from the Black problem and the opportunity to pursue such traditional vocations as wrecking and turtleing. Governor Colebrooke of the Bahamas on July 9, 1835 had written his superiors in Britain that “many settlers in Abaco who possess sloops and trade with the United States have lately...speculated in quitting the colony.” Records show a decrease in the total population of Abaco of seventy-three persons between 1834 and 1836 (Riley 1983).

Bahamian colonization of the Keys had commenced soon after American annexation and had shaped the unique cultural patterns of those islands. As early as February 1, 1834, a man named Curry had sailed his American registered sloop into Nassau harbor from Key West with a cargo of turtles for a firm of Bay Street merchants (Riley 1983). Even earlier, in 1828, Congress had established a territorial superior court in Key West with admiralty jurisdiction, at least partly to prevent wreckers from taking salvaged ships and goods to Nassau or Havana (WPA 1949). Before the Civil War, immigration from the Bahamas had helped make Key West Florida’s largest city and had insured that the Conchs would be one of the most important groups in the city (Tebeau 1971). Key West, with the opportunities afforded by rapid growth and with its harsh restrictions on Blacks, had been a congenial world for white Bahamians in those days (WPA 1949).

This immigrant stream from Abaco and its satellites was composed of a population formed by intermarriage and cultural fusion between the Loyalists and their Conch neighbors. The old name for the original inhabitants of the Bahamas, “Conch,” became the common appellation for all white Bahamians in Florida. It seemed fitting that the more plebeian population of the Abaco group should first carry this name to Florida, because the process of merger was more advanced there (Riley 1983).

Smiley and White (1959) characterized the Key West Conchs as “fundamentally sea folk.” They also said Conchs were “an extremely close-knit group...gracious, clean-living, kind and church-going.” Langley and Windhorn (1974) described the Bahamian population of the Florida Keys as Methodist, “honest and possessed of great family pride.” Both works claimed the speech of the Conch population of the Keys continued to vaguely reflect its Bahamian background. Many of the traditional values of the Conch cultural complex reflected the Loyalist background of the immigrants.
In the first period of settlement, Key West had almost all of the permanent population of the Keys, but by the early years of the twentieth century Bahamians were well established on Key Largo (Femald and Purdum 1992). Penetration of that area commenced with the traditional Bahamian activities of mahogany cutting and boat building. These were accomplished by transients, a common feature of the early Bahamian utilization of Florida resources. Later permanently settled farmers grew pineapples, tomatoes, melons, and key limes (Langley and Windhorn 1974).

It seems certain that the discrete Conch populations of the Keys and Riviera Beach formed part of a much broader population movement. Judge Curry and his family history, as narrated to the author, illustrate the lives of other immigrants who lost their distinct Bahamian character through contact with other, much larger, groups and through isolation from the centers of Conch culture. His family settled in Manatee County before the Civil War (Curry 1994). In those days, the water connection between the Manatee County area and Key West was the most important means of communication with the outside world and there was some Bahamian immigration to the county. Even a sugar industry, so typical of Loyalist Florida, became a feature of the area, as evidenced by the famous Gamble Plantation (Tebeau 1971).

The Conch populations of the Keys and Riviera Beach constitute relic groups that survived as discrete populations because the Keys remained geographically isolated and Riviera Beach had been too recently settled by a numerically dominant group. Key West, of the two, became more important because it served as a dispersal point for other currents of settlement and evolved into a more fully developed cultural center. Conch residents of the island exercised a more active role in all facets of its life than their counterparts in Riviera Beach. For example, the unique Conch architecture of some of Key West's buildings is famous and remains a major tourist attraction (Smiley and White 1959: 25-7; Riley 1983). Further, the city itself was founded many years before the other community and developed into an important center during the early years of American rule in Florida.

In terms of numbers involved as well as contributions made, the migration of Bahamians to Key West, including some Blacks, was very significant. By 1892, 8,000 of Key West's 25,000 people were Bahamians. The maritime activity of sponging constituted their principal livelihood (Mohl 1987). A numerous population, coupled
with a clannish tradition, encouraged by the Loyalist past, guaranteed group survival in a polyglot city with a strong Cuban element. Their isolated and insular culture contributed to an environment which accommodated the free and permissive lifestyle of other groups in the Keys.

Black Migrants

Bahamian blacks had been familiar with Florida's lower east coast, and particularly the Florida Keys, long before the building of Miami... According to one Bahamian writer, "these early visitors regarded Florida much as another island of the Bahamas." (Mohl 1987).

Miami has always been an attractive destination for the Caribbean peoples, but Bahamian Blacks seemed especially subject to the "pull" of the city on Biscayne Bay. From 1896 to 1920, the city grew from a few hundred to almost 30,000, and Black islanders, nearly all from the Bahamas, totaled 4,815 at the end of that period. The islanders were over half the city's Black population, giving Miami a unique Caribbean flavor (Mohl 1987).

Blacks came because they had long been familiar with the Florida coast and the rapid pace of development of the Lower East Coast created many opportunities. The scrubby pine and oolitic limestone, comprising important parts of the physical environment of South Florida, were similar to the unyielding soil and struggling vegetation of the Bahamas. Bahamas knew how to coax trees, vegetables, and fruits from rocklands. A rapidly expanding economy and the ease with which Bahamas could practice their subsistence gardening in a familiar environment certainly seemed strong inducements to immigrate (Mohl 1987).

Ten to twelve thousand Bahamas, one-fifth of the entire population of the islands, had crossed the narrow seas to Florida between 1900 and 1920. Rising Florida agricultural production and increased import duties on Bahamian agricultural products had crippled the fragile economy of the colony. The consequent unemployment and underemployment had been important "push" factors encouraging emigration. Regular steamship service between Florida and Nassau for the first time had made that option affordable and readily available to Bahamian Blacks (Mohl 1987).
Florida’s construction industry experienced boom conditions in those days and the Florida East Coast Railroad was extended to the Florida Keys after 1905, producing many jobs for manual laborers. The reputation of the Bahamians for masonry skill certainly made them attractive employees in the building trades. Florida citrus groves and vegetable farms expanded and Bahamians had the necessary experience in both forms of husbandry. This early phase of the development of the Lower East Coast required manual labor to build infrastructure and to establish the primary industries. With their determination and tradition of hard work, Bahamian Blacks had the right qualities to exploit these opportunities (Mohl 1987).

Culturally, the Bahamian impact on Miami, and especially on Coconut Grove, remained notable. They created a cohesive ethnic community with its own churches and social organizations. Guy Fawkes Day was celebrated for many years and the annual Coconut Grove Goombay Festival was a permanent addition to the calendar (Mohl 1987). Some of the unique Bahamian Black contributions to the Miami cultural milieu certainly derived from the larger Loyalist community. Even the Bahamian Black presence in Miami, and in the Bahamas itself, took place as a consequence of the Loyalist migration of long ago.

Riviera Beach

Between 1910 and 1914, about twenty-five fishermen built shacks to shelter them on the island. At first the Conchs stayed only during the fishing season. By 1920, the settlement had become a permanent community of about sixty families, but many shanties were still occupied only during the winter fishing season (Foster 1991).

Riviera Beach in some respects experienced a different kind of colonization than the process which started about eighty years before in the Keys. Both movements were initiated by a white, maritime people, but the numbers involved in the Riviera Beach migration were much smaller and that population settled in a very limited coastal area. Working class in its self-image, the name “Conch” was not used with the same pride as in the Keys and “Conchtown” was a term of opprobrium. They also faced the suspicion of racial mixture, which relegated them to a lower social position, and the “Conch” name carried the taint of that mixture.
Both groups were noted for their sincere dedication to the Protestant religion, but the dominant sect appears to have been Methodist in the Keys and Pentecostal in Riviera Beach (Langley and Windhorn 1974; Foster 1991).

The primary sources of the Riviera Beach migration, Spanish Wells and Eleuthera, suggest a greater representation of the descendants of the old Conch inhabitants of the Bahamas. Only Long Island, of the three sources named by Foster (1991), was in the Loyalist settled islands. Movement to the Keys had been, conversely, largely from Abaco and its satellites and it involved the vigorous descendants of the Loyalists from those northern islands. The presence of some racially mixed persons as an integral part of the Riviera Beach Conch community is consistent with the more tolerant racial attitudes of the original British population of the Bahamas, and certainly not of the Loyalists (Foster 1991).

Other cultural traits and common historical themes link Riviera Beach with the pervasive Loyalist culture of the Bahamas. Foster (1991) described them as "a close-knit group," in the same words most authorities used to describe the Conch population of the Keys. They were so close-knit in the early days that marriages between cousins became common and about ninety percent of them were related to one another. Riviera Conchs continued the defiant Loyalist tradition of deep pride in their British heritage. Like all Loyalist populations, they maintained a respect for the law and civilized behavior (Foster 1991).

Bahamian fishermen initiated the movement to the Riviera area by establishing temporary quarters at the old inlet during the fishing season. They had long known and used the rich areas within the Gulf Stream, and it was inconvenient to return to the Bahamas after each fishing trip. In 1922 their settlement at Riviera Beach had become permanent and legally incorporated. Riviera grew to a little over 800 inhabitants in 1939, including a large majority of Conchs (Foster 1991).

Fishing remained the dominant occupation, but boat building became another important Riviera activity. During Prohibition, building fast boats and smuggling from the Bahamas became very profitable. Several points in the Bahamas were within sixty miles of the Florida coast. The whole community benefited economically from this illegal trade, but only a few people actually participated (Foster 1991).
Their primary maritime activity continued to be fishing. They formed a cooperative named the Fisherman’s Corporation which remained active for twenty years. Riviera Conchs even tried to establish a statewide fishermen’s union, but others lacked their vision and cohesion (Foster 1991). These activities seemed consistent with the old Loyalist tradition of trying to maximize economic opportunity and attempting to exploit every favorable circumstance.

Immigration from the Bahamas to Riviera remained easy. “No one in the colony remembers ever being bothered by the U.S. immigration authorities.” In the first part of this century, British subjects from the Bahamas entered because it was inconvenient to return to the Bahamas after each fishing trip. In 1922 their settlement at Riviera Beach had become permanent and legally incorporated. Riviera grew to a little over 800 inhabitants in 1939, with a large majority of Conchs (Foster 1991).

Conclusion

The community at Riviera Beach proved to be the last Bahamian settlement founded along the Florida coasts. Although its development seems not to have been hindered by the new immigration laws, they ultimately precluded further enclave type Bahamian colonization of the peninsula. Migration of poorer whites to Riviera and Blacks to the Miami area closed an era in the history of immigration from those Loyalist islands.

REFERENCES


*New Smyrna Beach, Florida*. (1993) Map. USGS.

*Ormond Beach, Florida*. (1993) Map. USGS.

Parrish, Lydia Austin. "Records of Some Southern Loyalists: Being a collection of manuscripts about some eight families, most of whom immigrated to the Bahamas during and after the American Revolution." Collected from 1940 to 1953. Typed manuscript. Widener Library, Harvard University.

Anderson

Florida’s Bahamian Connection


Florida Agriculture and the Collapse of the State Farmers Alliance, 1880–1891

Shira Birnbaum
Florida State University

In the last half of the 19th century, a new national economic system emerged from the factory expansions of the Civil War. Characterized by tight money supplies, expensive credit, and powerful bankers and railroad monopolies, the post-war economic regime established an industrialist class in Northeastern cities while leaving millions in poverty and farm tenancy in the countryside, particularly in the South and the Midwest. In the process, it set in motion a new populist consciousness among the poor. The Farmers Alliance was one of many organizational expressions of this emerging consciousness. Originally founded in Texas by a small coalition of politically astute hardscrabble farmers, the Alliance movement expanded quickly throughout the midwest and the former Confederacy, gaining members by the tens of thousands. The Alliance was short-lived, however. By the turn of the century, internal divisions had divided the movement’s supporters, and mainstream political parties had adopted watered-down versions of its populist goals.

This paper is about the Farmers Alliance in late-19th-century Florida. When Alliance organizers from a dozen states met in Ocala, Florida, for their second annual national convention in 1890, the movement was reaching the height of its power nationally and had an estimated three million members (Woodward 1951). In Florida at the same time, ironically, the movement was flagging. Membership in the Florida Alliance, numbering 25,000 in 1889, fell to just a few thousand in 1891 and to nothing the following year (Krauss 1926). The geography of agriculture in Florida played an important role in this demise. The formation of a strong coalition movement was blocked in Florida by a combination of racism, black disenfranchisement and regional agricultural and commercial distinctions that pitted northern Floridians against their southern neighbors. This paper traces the history of this rift. In North Florida and the panhandle, the Alliance drew members from among tenant farmers, indebted farmers, cotton, rice and tobacco farmers, all of them with
an anger born in the hardships resulting from national and regional post-War money policies. In southern Florida, the peninsula, on the other hand, farmers from the emerging citrus belt had a different outlook. These were hopeful farmers, many of them romantic visionaries, some of them transplanted northerners with money to hold them through times of risk. Many had a conservative vision of individual entrepreneurial striving, of taming the Florida wilderness into a garden based on scientific crop management and good business sense. Like panhandle farmers, they were frustrated by high railroad freight rates and tight credit. But the federal government sent experts to help promote their new citrus science, and they knew they had a growing market for exported luxury foods in the expanding middle class up North. Citrus farmers, particularly owners of the larger farms, rejected the collectivism of the Farmers Alliance.

Tight Money: Conditions after the Civil War

Southern farmers had lost a third of their farm animals and half of all farm machinery to pillaging during the Civil War (Woodward 1951: 177-78). Republican tight-money policies imposed during and after the war cascaded into a series of personal and financial disasters. Money was unavailable; bank circulation, for example, amounted to $77.16 per person in Massachusetts in 1869, compared with only $0.13 per person in Arkansas that same year (Goodwyn 1976: 27). There were remarkably few banks in the South (Woodward 1951), which meant that farmers had few ways to seek credit. More importantly, interest rates skyrocketed, and thousands of farmers couldn’t secure loans to pay wages or buy new seeds or equipment. Some sold out: Northern investors bought thousands of farms throughout the South in the decades following the War. Their purchases created a new kind of absentee-run plantation system (Woodward 1951). Other farmers turned to leasing or sharecropping.

Leasing and sharecropping spread the risk of crop loss. But they also led to the rise of an institution that sparked loathing in the hearts of the poorest farmers. This was the crop lien system, a system based on indebtedness to a new kind of Southern entrepreneur: the merchant banker (Ransom and Sutch 1969). The merchant banker, or “furnishing man,” took loans from northern banks to supply his regional farm-goods store. He routinely paid 18 percent
or more as interest, passing along the cost to his farmer-clients, in some cases charging an effective rate of interest of 100 percent (Goodwyn 1976; Cory 1963). When farmers asked him for necessary supplies, he furnished them. But if they couldn’t pay cash (most couldn’t), they had to mortgage their crops as payment, and they subsequently faced even higher rates of interest. At the end of each harvest year, the farmers would turn over their crops to have the value of the loan—plus interest—deducted. Under Republican Reconstruction, all Southern states helped to aggravate the burden on poor farmers by passing laws making the crop mortgage system legally binding (Ransom and Sutch 1969).

Commodity prices were low and falling almost continuously after the Civil War, particularly on cotton and especially at harvest time, when the market was flooded. This contributed to a cost-price squeeze for farmers. In 1864, for example, cotton in Leon County, Florida, sold for more than $1 per pound. By 1870 the per-pound price had dropped to 24 cents, and by 1890 it had plummeted to less than 12 cents (Hamburger 1987). The result was that thousands of farmers found themselves mired in debt, year after year. They couldn’t diversify because they didn’t have the capital; cotton cultivation expanded throughout the South as farmers struggled to compensate for staggering debts (Woodward 1951). Cash crops like cotton and corn were what the merchant bankers demanded, since they were less of a risk than untended produce. Unable to keep up with their mounting debts, however, thousands of Southerners lost their farms and joined the growing ranks of the hungry and homeless.

**Rise of the Farmers Alliance**

East Texas was a mecca for Southern farm refugees who perceived in the West the possibility of a promising new start. In 1878, a small group of these refugee farmers organized a secretive club—it held closed meetings—they called the Grand State Farmers Alliance. There were other grassroots agrarian groups in the South at the time, among them the national Grange movement and two more politically radical groups, the Agricultural Wheel and the Brothers of Freedom, both based in Arkansas. But the Texas group had a specific plan for itself: to break free from the prevailing credit system by finding some way to bypass the merchant banker. The Alliance strategy was to establish farmer-owned cooperative
“bulking warehouses” where members could merge their yields and attract competitive bids from large-scale regional buyers who would pay in cash instead of credit. After establishing these more favorable terms of sale, the Alliancemen would then pool their money to buy supplies and equipment directly from Northern manufacturers at cheaper bulk rates. All over Texas, Alliancemen found they could get cheaper rates on machinery, fertilizer, clothing and seed (Pavlovsky 1974; Goodwyn 1976; Woodward 1951). The idea caught on. By 1880, the Texas Alliance had its own newspaper—the Southern Mercury. By 1886, thousands of Texans had joined 2,700 Alliance branches in 84 counties (Mitchell 1987; McMath 1975; Barnes 1984).

Expansion, however, spurred internal division, and from the earliest years, the Farmers Alliance found itself plagued with contradictions. One early paradox of the Farmers Alliance was its racial segregation. The Farmers Alliance was open to women, but not to blacks. Many Alliancemen had fought in the Confederate Army. They’d shed blood to preserve racial oppression and now resisted some members’ calls for a racially united social movement. Black farmers organized a separate Colored Farmers Alliance in Texas in 1886. Though the two groups would work together closely over the next few years, the gulf between them offered a weak link that Democratic Party politicians—waving a banner of racist Confederate pride—could pry open later.

An equally important internal division centered on farmers’ visions of their goals and their status as poor property owners—capitalists, in a sense, with no capital. Buoyed by some early successes with cooperative marketing, many Alliance members began imagining new political avenues for their activism. In 1885, some Alliance members announced they would join with the Knights of Labor, the militant urban workers’ union that was organizing boycotts of railroads and steamship lines in Texas and the Midwest (Zinn 1980). When the Knights of Labor went on strike, many Alliance members offered food (Goodwyn 1976). Ironically, however, just as some Alliancemen were envisioning solidarity with urban industrial workers, others were seeing the opposite: coalitions of farmers and capitalists. In 1885, Texas Alliance leaders passed a resolution saying that “capital and labor should be allies and not enemies” (Goodwyn 1976:43).

In 1887, a new leader took over the Alliance and temporarily quieted the growing internal divisions. Under him, the Alliance embarked on several large-scale cooperative marketing projects and
sent "lecturer-educators" throughout the South. By 1887, the Alliance had branches in 10 states. It merged with the Farmers' Union of Louisiana, another populist group, in 1887, and with the Agricultural Wheel of Arkansas in 1888. Estimates of its membership ranged from 1.3 million to 3 million nationwide (Woodward 1951). Members protested railroad freight rates and the monopolistic practices of grain elevator companies; they found ways of bypassing regional middlemen and extricating themselves, at least partly, from debt; they were becoming a potential threat to two-party politics, and both Democrats and Republicans started noticing them (Clark 1927).

Although there are few records giving detailed accounts of Alliance membership, it appears that Alliance members came from a broad cross-section of poverty-level conditions in the South. In South Carolina, for example, the only state where records are available, about half of the Alliance members owned their own land, and another third were tenants or sharecroppers. Membership also included preachers, teachers, mechanics and country doctors. Lawyers, real estate dealers, store owners, bankers, warehouse owners and railroad employees were banned from membership (Woodward 1951: 193).

Alliancemen faced strong opposition. In Dothan, Alabama, for example, after the local Alliance pooled money from 150 farmers and bought fertilizer at highly reduced bulk rates, bypassing local dealers, a group of local merchants, bankers and warehouse owners convinced the city government to pass a special tax on Alliance storage warehouses. When the Alliance moved its warehouse to the outskirts of town, a gunfight ensued, and two Alliancemen died (Clark 1927; Goodwyn 1976; Woodward 1951). Alliance newspapers were being founded in many states. In Mississippi, the building housing one of them was burned to the ground (Woodward 1951).

Florida After the War: Racism and Regional Disparities

Post-Civil-War Florida was a land of powerful contrasts. There were growing regional disparities in wealth and agricultural development, enormous investment opportunities, strong fear of black empowerment among both rich whites and poor ones. The Democratic Party served as a strong voice for conservative political thinking. The situation simultaneously encouraged and thwarted agrarian discontent and collective consciousness.
Like other former Confederate States, Florida had lost tens of millions of dollars to property damage during the war (Hanna 1948). With the goal of luring much needed capital to the state, carpetbaggers and scalawags sold land cheaply to railroad and land development companies run by Northern investors. Between 1865 and 1870, millions of acres of timber and farmland were bought by investment firms incorporated in states like New York, Pennsylvania, Connecticut, Illinois and Maine (Hanna 1948: 322-4).

Republican Reconstruction had ended in statewide elections in 1876; Conditions of gross inequality prevailed under the new Democratic regime. The post-Reconstruction Democrats called themselves “Redeemers,” but their policies didn’t redeem the poorest from the new internal colonialism. On the contrary, the Democrats’ main strategy was to disenfranchise blacks, keep taxes low, spend little on infrastructure improvement or social services, and grant additional large landholdings to railroad and investment firms. Railroads had been exempted from state taxes by an 1855 law; neither Republicans nor Democrats overturned this law for several decades (Abbey 1938; Hanna 1948).

In 1884, a coalition of black Republicans and sympathetic white Democrats founded the Florida Independent Party, which held a rally in Gainesville that year to demand equal access to education, transportation and public office. Similar small independent parties were emerging in Alabama, Georgia, Mississippi and Texas, all posing small but distinct threats to white leadership. The following year, Florida Democrats took action to obliterate the new organization. In 1885, when legislators rewrote the state constitution, they established a poll tax and several other measures, including a literacy test, effectively banning blacks from voting. In 1887, Florida legislators became the first in the nation to pass a Jim-Crow law requiring railroads to segregate passengers by race. On top of this, in 1889, Floridians passed a “multiple ballot” law requiring that voters fill out separate forms for separate ballot boxes for each elected office. By 1889, Florida was a nearly single-party state; it belonged almost exclusively to Democrats (Pavlovsky 1974). Measures were also passed encouraging the expansion of the convict lease system.

By 1890, conditions for many Floridians were grim, particularly in northern and panhandle Florida and particularly for black farmers. There had been more than 60,000 slaves in Florida at the outset of the Civil War (Williams 1950), and blacks now outnumber
bered whites in the panhandle (Hanna 1948), where prices for traditional cash crops had plummeted to one-tenth their 1864 values (Hamburger 1987). About 35 percent of Florida farmers, most of them in the north and panhandle, were tenants or sharecroppers (Cory 1963:91). They were paying roughly two-thirds of their crop as rent (Hanna 1948: 299).

Yet just as one form of agriculture stagnated, the citrus industry was expanding. Spaniards had brought oranges to Florida in the 16th century, but commercial expansion didn’t start until 1821, when Florida became U.S. property. Slave traders were among Florida’s early grove planters. One well-known slave trader used profits from his business to plant large groves along the St. Johns River, which would soon become a regional center of citrus cultivation (Clark 1947).

Nearly every state sent new residents to Florida in the decades after the Civil War. Fueling the migration were dozens of promotional brochures and newspaper articles extolling Florida’s virtues. There were books and tourism pamphlets; editors in Massachusetts and Iowa published glowing letters from native sons gone South. Orange groves, the promoters promised, bore golden fruits and required little help from farmers (“A Florida Settler of 1877”). Immigrants came by the thousands as transportation infrastructure—coastal steamer routes, train routes, riverboat routes—multiplied (Hanna 1948; Clark 1947).

A few of the nation’s wealthiest industrialists came to Florida to get involved in real estate and in the expanding citrus industry or businesses that served it. For example, Henry Sanford, an industrialist whose family owned brass factories in Connecticut and who had served as President Lincoln’s ambassador to Belgium, bought 12,500 acres for an orange grove, establishing the town of Sanford in 1871 (Nolan 1984; Hanna 1948); Philadelphia tool manufacturer Hamilton Disston bought 14 million acres in the Kissimmee Valley in 1883; Henry Plant, another Connecticut millionaire, began buying and consolidating railroad lines in the emerging citrus belt in 1879. By 1899, he had amassed and built a huge railroad empire stretching from Charleston to Tampa (Hanna 1948). Henry Flagler, former president of Standard Oil of New Jersey (Nolan 1984) came to Florida in 1883 to buy and build resort hotels and railroads, a few of them in the citrus belt (Hanna 1948; Woodward 1951).

New towns were opening up rapidly as northern-financed railroad construction linked the peninsula to regional markets in
Jacksonville. Most citrus growers in 1875 worked along the Atlantic coast of north Florida (Lewis 1979). But between 1880 and 1885, 1,100 miles of new railroad track were added, and considerable mileage—450 miles, built mostly by Connecticut industrialist Henry Plant—now made up a network of shipping lines crisscrossing the peninsula from Jacksonville south to St. Petersburg. By 1880, the state had 269,493 residents, a third of them born elsewhere (Lewis 1979; Weeks 1977). Orange County even had a polo club for British-born orange growers (Weeks 1977). The state orange crop amounted to 25 million oranges in 1875. Six years later, it had more than doubled (Lewis 1979; Clark 1947). By 1885, 25,000 acres of orange groves were adding $2 million each year to the Florida economy (Weeks 1977: 12).

Citrus farmers experienced considerable hardships and challenges on the tropical frontier. Their crop, after all, had not yet become the focus of much research, and citrus farming consequently was considered somewhat risky and experimental. Still, their experiences were far from those of the embattled farmers of the cotton belt. For one thing, it took some capital to build an orange grove, especially since speculation was driving up land prices throughout the citrus belt. A grove that sold for $12,000 in 1874, for example, sold again for $15,000 in 1878 and again for $42,000 in 1881 (Clark 1947: 43). As early as 1868, plots along the St. John’s River were selling for $100 per acre. And near Orange Lake, a 500-acre tract sold for $4 an acre in 1869, $10 an acre in 1871, and $30 an acre in 1873 (Weeks 1977: 43). A U.S. Department of Agriculture study estimated in 1882 that it cost at least $850 just for maintenance of five acres of orange grove for five years (Clark 1947: 42).

Expansion brought its own internal pressures for change. As prices fell because of increased production, competition grew more fierce, and soon larger, wealthier growers went looking for ways to segment the citrus market—to differentiate themselves, their processes and their products. They experimented with new ways of distributing their crop; they also established criteria for grading and rating each crop so that each grade could command its own price. New marketing and growing technology, new construction and new scientific research—mostly sponsored by larger growers in conjunction with the federal government—made possible improved-quality foods; they also reinforced social rifts separating larger growers from smaller ones, wealthy growers from poorer ones, folk farming from the emerging science of citrus-crop management.
A grove plow, for example, was developed and marketed in 1873. The following year, several growers established the Florida Fruit Growers Association. The president's brother-in-law, a New York fruit buyer, built Florida's first commercial citrus-packing house that year. A few larger growers soon started building their own packing houses, and in 1875 the year-old Fruit Growers Association adopted a standardized box size. These changes made for better grades of produce and more efficient marketing; they opened up new opportunities to increase prices, but they benefitted larger growers more than smaller ones. This is because commercial fruit packers wanted good, unbruised fruit that had been carefully picked. Larger growers could afford to hire workers to pick and sort fruit slowly and carefully. Smaller growers, on the other hand, lacked the capital to refine their operations, and many continued the old system of picking fruit in large quantities and loading it, unsorted, onto wagons where it got bruised in route to sale. The low relative quality was soon bringing lower prices to the smaller growers, further reinforcing emerging social divisions (Weeks 1977). A few packing houses, moreover, soon established more elaborate production lines—increasingly mechanized as years went by—aimed at sorting, grading, packing and wrapping fruits separated by size and appearances. By 1889, there were mechanical sorters and wrappers to speed up the process and even print designer-label brand names on fruit-wrapping paper (Weeks 1977).

New fertilizers were being invented and were selling for up to $60 a ton as early as the 1870s. A few larger growers (Henry Sanford among them), furthermore, purchased swamp lands and built small railroads to carry rich swamp muck—for fertilizer—to their groves. By 1886, one large grower built a $50,000 irrigation plant that served 250 acres of grove. Smaller growers were relying on barrels of water carried from nearby lakes (Weeks 1977).

Throughout the 1870s, nurseries sprang up in the citrus belt; they offered growers who could afford them new experimental varieties, many of them imports from citrus-growing British colonies in the Middle East. The United States Department of Agriculture joined in citrus experiments in 1871, building a fruit-tree greenhouse in 1878 and sending Florida an entomologist specializing in citrus infestations in 1879. By 1885, there were more than 40 commercial citrus nurseries, and managers at Henry Sanford's groves reported experimenting with 180 citrus varieties (Weeks 1977). The federal government sponsored reports and publications
in citrus science throughout this decade, and in 1889 came up with an experimental insecticide which it distributed to several growers participating in government-run research projects.

Florida citrus growers competed among themselves; but they also competed in an international market that brought to U.S. consumers, particularly in the northeast, citrus products from Mexico, the Caribbean and the Mediterranean. At times, consequently, fruit markets were flooded, and prices fluctuated wildly. In response, growers early on went looking for ways to rationalize and coordinate the marketing and pricing of their crop. In 1985, several of the largest growers organized the Florida Fruit Exchange (FFE). The FFE chose several men to be its exclusive agents in several major market cities; these special agents would be in charge of accepting shipments and selling fruit at regional auctions. Hoping to use the system to secure prices and gain access to large urban markets, many small growers participated in the Exchange. But the very first year was a failure. Small growers, it turned out, wound up flooding the market with poor quality fruit, including oranges frozen in a cold wave in the winter of 1886. The larger growers, on the other hand, had hedged their bets—staying away from the smaller growers and for the most part bypassing the FFE, instead shipping fruit through the old and familiar system of independent brokers working on consignment and commission. The result: prices fell; everyone, but particularly the smaller growers, lost money. The following year, growers from seven counties organized the Florida Fruit and Vegetable Growers Protective Organization, another attempt at uniting farmers for mutual benefit. Once again, however, membership was minimal.

This lack of coordination and trust among citrus growers would plague the peninsula and thwart industry-wide cooperation for decades to come (Cory 1963; LaGodna 1962; Clark 1947; Pavlovsky 1974; Weeks 1977). But it had larger ramifications. The same lack of trust and coordination—dividing blacks from whites, rich from poor, cotton farmers from citrus farmers, and citrus farmers from one another—thwarted the Farmers Alliance as well.

The Farmers Alliance in Florida

Two organizers from the Texas Farmers’ Alliance came to Florida in 1887, where they encountered the prevailing conditions of regional unevenness in agricultural development (Proctor 1950;
In the peninsula, where farmers' major concerns were marketing citrus fruits, securing prices and scientific support and attracting new residents and investors, Alliance organizers rallied little initial support. In northern Florida and the panhandle, by contrast, among the tenants and indebted men clinging to ailing cotton, rice and tobacco farms, they rallied supporters remarkably quickly. By October of 1887, after just a few months of Alliance organizing, there were 2,000 Florida Alliance members divided into 65 local clubs. A month later, there were 120 local clubs. The first annual Florida Alliance convention, held in the panhandle town of Marianna in 1887, drew representatives from 12 counties, 10 of them in the cotton-growing region of the northern part of the state, including Bradford, Calhoun, Gadsden, Jackson, Liberty, Madison, Walton, Washington, Holmes and Duval counties (Knauss 1926; Cory 1963). The Alliance bought Marianna's local newspaper, the West Florida Inquirer, renaming it The Farmers Alliance of Florida and Georgia (Knauss 1926).

The Florida Alliance's first annual convention built upon and restructured a pre-existing but loosely knit north-Florida farmers' movement. The year Alliance organizers arrived, the Florida Farmers' Union had listed at least 1,700 members in 12 cotton-raising northern counties. Unlike the Alliance, however, the Farmers' Union forbade racial discrimination at the state level, and all members were welcome at state meetings (Cory 1963). In 1888, when Alliance organizers got the Union to agree to a merger, the rules were changed, and blacks were put out of the new organization.

The Florida Republican Party—what little remained of it—recognized the new Alliance almost immediately, including in its 1888 party platform a resolution of "sympathy and support" (Cory 1963:28) for Alliancemen and their goals. But Alliance leaders and strategists were careful not to alienate or to woo either party—Democrat or Republican—and that year the Alliance leadership passed a resolution forbidding members, under penalty of expulsion, to run for office as third-party candidates (Cory 1963:31). This was soon to become a central tension in the Florida movement.

By July of 1889, the Alliance had 372 local branches in 24 counties, and by December of that year it boasted 25,000 members. Remarkably, this was nearly half the voting population of Florida that year (Knauss 1926:304). The numbers served as powerful evidence of the Alliance's success in tapping into regional discon...
tent. Most members came from the north and the panhandle, but there were small local branches by this time in ten citrus-belt counties as well (Cory 1963; Knauss 1926).

Despite its expanding membership, the Florida Alliance ran into trouble right from the start. Just as Alliance men stepped up efforts to lure new members, especially in the north, interest was growing in the peninsula for a new citrus-marketing program to serve the exclusive interests of south-Florida orange growers. From the beginning, then, the Alliance faced competition for farmer allegiance, and orange growers stayed away. This, combined with growing regional and ideological tensions in the populist movement as a whole, put the Florida Alliance in a difficult situation.

In 1888, Alliance leaders organized the cooperative Florida Alliance Exchange in Jacksonville. Modeled after the Texas Farmers Alliance’s experiment in agrarian cooperation, the Exchange’s goal was to free Florida farmers from oppressive prevailing terms of credit. In its very first year, the Alliance Exchange handled thousands of boxes of farm products, particularly cotton, with nearly $40,000 in orders for bulk-rate supplies. It was able to secure loans to farmers at a rate of 12 percent interest instead of the more common 100 percent (Cory 1963), and its warehouse managers negotiated directly with regional cotton mills to bypass local merchants (Pavlovsky 1974:160). An estimated 20,000 farmers, almost exclusively from northern Florida and the panhandle, conducted business dealings through the Alliance Exchange in the first year (Pavlovsky 1974:159).

As citrus farmers saw it, however, a central problem with the Alliance Exchange was that it didn’t meet their needs. The Exchange warehouse building, for example, didn’t have refrigeration facilities—something citrus growers required if they were to participate in the auction system. Consequently, in 1889, a few citrus growers organized their own separate Orange Auction and Vegetable Company in Jacksonville, and arranged, at least in principle, to cooperate with the Alliance Exchange. Few growers joined, however. The Alliance Exchange that year wound up handling only poorer-grade oranges—and only in relatively small quantities (Weeks 1977; Pavlovsky 1974). Some growers tried again, organizing the Florida Orange Growers Union in 1889. Once again, few growers joined it. The old, non-cooperative marketing system—by which independent brokers contracted to work on consignment
The Florida Geographer

with growers—still accounted for nearly 90 percent of dealings in oranges (Weeks 1977: 199).

On top of its problems uniting citrus farmers with other growers, the Florida Alliance started experiencing internal dissent. The battle lines were drawn starkly as early as 1889, when the Alliance held state-wide elections for officers. The new state Alliance vice-president was a political radical who hoped to use Alliance machinery and personnel to launch a new independent political party which he hoped would challenge Democrats and Republicans on issues of national banking and monetary policies. The newly elected state president, on the other hand, was a staunch Democrat. He pledged unity and cooperation among Alliance members and cautioned against a new "class" politics emerging from some sectors of the Alliance movement. (Knauss 1926; Proctor 1950; LaGodna 1962; Pavlovsky 1974). Florida Alliancemen were not alone in facing internal political strife. Throughout the former Confederacy—in Tennessee, Texas, Arkansas, Georgia, North and South Carolina, Alabama and Mississippi—Alliance leaders and rank-and-file members split along similar lines (Pavlovsky 1974). While midwestern Alliancemen tended to support the formation of independent new political parties, Southerners balked. Their main fear was of dividing the white vote and consequently jeopardizing white rule in the South. For this reason they tended to want to reform the Democratic Party from within rather than from without (Abbey 1938; LaGodna 1962; Pavlovsky 1974; Woodward 1951). When Alliancemen met for their first annual national convention in St. Louis in 1889, the regional rifts were palpable.

State legislative elections around the nation in 1890 brought dozens of Alliancemen and Alliance sympathizers into formal politics. After Florida state elections that year, three-fifths of the legislators were Alliance members. What's more, there were seven state newspapers owned by the Alliance. Similar patterns marked other southern states. But throughout the South, while the newly elected Alliance Democrats introduced limited measures to regulate certain banking practices and control working hours, they ignored many of the crucial and more intractable sources of agrarian poverty—the crop lien system, the national finance and credit crisis, the railroads and the land barons (Proctor 1950).

By 1890, the Florida Alliance Exchange in Jacksonville was deeply in debt. Supply orders weren't being filled because money
was not available to pay for them. A number of farmers complained that products were disappearing from the warehouse (Weeks 1977). Unable to return farmers' money and crops, Alliance leaders admitted that the Exchange had been grossly undercapitalized, operating with far fewer funds than had originally been planned. The response from farmers was mixed. Some abandoned the Alliance in disappointment over financial mismanagement at the Exchange. Others blamed the Exchange's failures on broader conditions related to the national credit supply. A general feeling of malaise was taking hold, and the ideological gulf was deepening between branches of the movement in Florida and elsewhere.

The National Convention at Ocala

Events in Florida reflected and precipitated a nationwide reorganizing of populist sympathies. In December 1890, the national Farmers Alliance movement held its second annual week-long convention in the city of Ocala, Florida. Delegates came from throughout the South as well as from such places as Colorado, Illinois, Indiana, Kansas, Maryland, Missouri, North and South Dakota, Pennsylvania, Oklahoma, California, Michigan, and New Mexico. Florida Alliancemen hoped the convention would advertise Florida, luring investment from outside and new membership from the recalcitrant citrus belt. As convention hosts, Florida Alliancemen set up impressive displays of the Sunshine State's bounty, organizing field trips for fishing and swimming and awarding convention attenders large gift boxes of oranges and lemons. But infighting was rampant among delegates from opposing Alliance factions.

Almost all the Alliance delegates at Ocala hoped to develop a platform, some statement of specific policy goals related to the plight of the indebted farmer. What subsequently emerged from the Ocala convention — amid bitter factionalism — was a controversial platform, the "Ocala Demands," that became the founding platform of the national Populist Party, organized formally several months later. Some of the demands on the platform were considered quite radical in their day in the sense of calling for unprecedented levels of government intervention in the economy. Conventioners demanded, for example, that the federal government intervene to stop currency contractions and expand the national money supply by at least $50 per capita. They demanded that the government ban futures trading and speculation on farm supplies and equipment —
a big demand, considering that Chicago and other emerging Midwestern power centers had been built explicitly by capital derived from such speculation. They demanded that the government abandon the gold standard and begin an unlimited coinage of silver (then considered plentiful). They also demanded that the federal government take back and distribute to settlers all land owned by railroads but not being used for rails. The Alliance platform called for strong federal regulation of railroads and a restructuring of the federal tax system that would shift major burdens from individuals to corporations (Knauss 1926; Proctor 1950; La Godna 1962; Pavlovsky 1974). The central and most controversial plank was a plan by which the federal government would abolish the national banks, replacing them with a system of county-level “sub-treasur ies” that would essentially serve as government-run crop storhouses and low-interest loan centers. Draped in dramatic rhetoric, the sub-treasury plan was touted by its supporters as a “system [to] emancipate productive labor from the power of money to oppress” (quoted in LaGodna 1962: 59). The New York Times, by contrast, which had sent a reporter to cover the Ocala convention, called the plan “one of the wildest and most fantastic projects ever seriously proposed by sober man” (quoted in Proctor 1950: 174). There was opposition from within the Alliance as well. One South Carolina Alliance member called the plan “so palpably wrong on its face as to make it absurd to all who have the prosperity and welfare of the country at heart” (quoted in Proctor 1950: 174). In essence, the Farmers Alliance was coming under intensive fire both from within and from the outside.

Radicals in the Alliance, for their part, hoped to use the Ocala Demands as a platform from which to move the organization toward becoming a third political party. Midwesterners—particularly from Kansas and Nebraska—worked especially hard to lobby the conventioneers for this goal, as did black members of the National Colored Alliance, which, banned from the whites-only formal Alliance meeting, was holding its own convention simultaneously in another part of town. Southern convention delegates, however, many of them Democrats, refused to join in this effort. The leaders among them lectured on the need for party unity to stem a tide of third-partyism (LaGodna 1962; Proctor 1950). Adding to the strife was debate over a bill, then pending in Congress, to bring state elections under federal supervision. Westerners and Midwesterners supported the bill, as did the Colored Alliance. Southern
Democrats, fearing a federally guided re-enfranchisement of blacks, strongly condemned it (Pavlovsky 1974; La Godna 1962).

The Ocala convention ended with a majority voting in favor of the controversial “Demands.” But too many ideological rifts had emerged, and when the convention ended, Florida Alliancemen found themselves unable to sustain a coalition either in spirit or in practice. By the summer of 1891, seven of Florida’s 676 local and county Alliance branches surrendered their charters. Dozens more, still formally in existence, had lost all their members. Democrats—playing on racial fears by calling for unity—had split from radicals. The Alliance Exchange, after less than two years, was on its last legs. By November 1891, one state newspaper reported that membership in the Florida Alliance had dropped to 6,500 (Abbey 1938).

By 1892, new institutions had emerged to channel populist energies. That year, the state Alliance’s radical former vice-president ran for governor as a third-party candidate, carrying five North Florida counties with 8,309 votes but losing miserably to the Democratic Party candidate’s 32,064 votes (Abbey 1938: 463; Knauss 1926: 314). Elsewhere in the nation, Farmers Alliance branches were organizing the emerging Populist Party. What remained of the Florida Alliance was subsumed into this official Populism. Florida farmers would never again try uniting under an organization catering specifically to agrarian interests.

Conclusion

The Farmers Alliance emerged from agrarian poverty brought on by post-Civil-War changes in national politics and the economy. It gave voice to farmers’ discontent with federal credit and money policies, and it enabled thousands to free themselves for a short time from overwhelming debt. But the movement was rife with contradictions. In Florida, Alliance promoters encountered racial fears that kept many members loyal to a repressive Democratic Party. They also encountered gross geographical disparities in agricultural wealth and vision, a situation that divided farmers and kept them from uniting around a common goal or perceiving a common enemy to fight. These served to make the state particularly unstable as a base for Alliance organizing. The movement itself was undercapitalized, and its Florida produce warehouse consequently went into bankruptcy, further diminishing the Alliance’s credibility and effectiveness. The story of the Florida Farmers Alliance reveals
the obstacles organizers face wherever they try shaping generalized agrarian discontent into a cohesive movement for social change. These are the obstacles posed by geographically divided interests and divergent social visions.

REFERENCES


Tallying Up the Cost of Hurricane Andrew

Morton D. Winsberg
Florida State University

Hurricane Andrew, which struck the Miami Metropolitan Area (Dade County) in August 1992, is regarded as the most costly natural disaster the nation has ever experienced. Damage has been estimated at 32 billion dollars, most of it to the county’s southern half. The scale of the long-term loss of shelter to its inhabitants has sometimes been compared to that which followed the San Francisco earthquake in 1906, and certainly is the greatest loss to a United States city since that disaster. Unlike survivors of the San Francisco earthquake, who had to live in hastily erected tent cities until the damage was repaired, those of Miami had all of Florida’s Gold Coast urban area to seek shelter. Most people who had to leave their homes moved elsewhere in Dade County, but others left for counties nearby, and some moved a far greater distance. An examination of the destination of Miamians who left the county before and following Andrew can shed light on the size of population movements following natural disasters, and the distance moved.

Fortunately, for many years, the Internal Revenue Service has released data on the county-to-county migration of people who file income tax forms and the number of their exemptions. Since tax filers and their exemptions together fairly approximate the total population of the nation the data have proven valuable in the study of internal migration within the United States. The period 1993 to 1994, during which Andrew struck Miami, is the most recent for which the IRS has released data. It also is the first period that the IRS has provided data on the amount of money reported on income tax forms. Now it is possible to calculate the flow of income between Dade and other counties.

For many years Dade County has been sending more people to other United States counties than it receives (Figure 1). Given that the county has approximately two million inhabitants, losses of this size are insignificant. Furthermore, for years the county’s population loss to other places in the nation has been more than compensated for by immigration from abroad. Immigration from abroad,
Table 1
Net Out-Migration from Dade County
To Selected Florida Counties and
Cities in Other States

net in-migration is italicized and underlined

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Alachua</td>
<td>374</td>
<td>287</td>
<td>341</td>
<td>190</td>
<td>1192</td>
</tr>
<tr>
<td>Bay</td>
<td>11</td>
<td>24</td>
<td>735</td>
<td>34</td>
<td>736</td>
</tr>
<tr>
<td>Broward</td>
<td>353</td>
<td>472</td>
<td>2015</td>
<td>705</td>
<td>3545</td>
</tr>
<tr>
<td>Charlotte</td>
<td>124</td>
<td>111</td>
<td>138</td>
<td>90</td>
<td>463</td>
</tr>
<tr>
<td>Citrus</td>
<td>115</td>
<td>111</td>
<td>227</td>
<td>144</td>
<td>597</td>
</tr>
<tr>
<td>Collier</td>
<td>375</td>
<td>270</td>
<td>439</td>
<td>391</td>
<td>1084</td>
</tr>
<tr>
<td>Duval</td>
<td>134</td>
<td>248</td>
<td>491</td>
<td>44</td>
<td>917</td>
</tr>
<tr>
<td>Escambia</td>
<td>54</td>
<td>98</td>
<td>134</td>
<td>39</td>
<td>325</td>
</tr>
<tr>
<td>Hernando</td>
<td>38</td>
<td>36</td>
<td>145</td>
<td>11</td>
<td>230</td>
</tr>
<tr>
<td>Highlands</td>
<td>207</td>
<td>259</td>
<td>647</td>
<td>381</td>
<td>1494</td>
</tr>
<tr>
<td>Hillsborough</td>
<td>98</td>
<td>34</td>
<td>1108</td>
<td>175</td>
<td>1415</td>
</tr>
<tr>
<td>Indian River</td>
<td>164</td>
<td>103</td>
<td>234</td>
<td>171</td>
<td>672</td>
</tr>
<tr>
<td>Lake</td>
<td>199</td>
<td>197</td>
<td>303</td>
<td>243</td>
<td>942</td>
</tr>
<tr>
<td>Lee</td>
<td>223</td>
<td>243</td>
<td>619</td>
<td>269</td>
<td>1354</td>
</tr>
<tr>
<td>Leon</td>
<td>227</td>
<td>301</td>
<td>420</td>
<td>315</td>
<td>1263</td>
</tr>
<tr>
<td>Manatee</td>
<td>111</td>
<td>63</td>
<td>218</td>
<td>90</td>
<td>482</td>
</tr>
<tr>
<td>Marion</td>
<td>285</td>
<td>292</td>
<td>608</td>
<td>475</td>
<td>1660</td>
</tr>
<tr>
<td>Martin</td>
<td>167</td>
<td>151</td>
<td>384</td>
<td>321</td>
<td>1023</td>
</tr>
<tr>
<td>Monroe</td>
<td>52</td>
<td>144</td>
<td>1535</td>
<td>415</td>
<td>2041</td>
</tr>
<tr>
<td>Okaloosa</td>
<td>1</td>
<td>76</td>
<td>948</td>
<td>20</td>
<td>1045</td>
</tr>
<tr>
<td>Orange</td>
<td>949</td>
<td>503</td>
<td>1051</td>
<td>556</td>
<td>2503</td>
</tr>
<tr>
<td>Osceola</td>
<td>119</td>
<td>123</td>
<td>355</td>
<td>157</td>
<td>597</td>
</tr>
<tr>
<td>Palm Beach</td>
<td>1702</td>
<td>1357</td>
<td>3433</td>
<td>2943</td>
<td>9435</td>
</tr>
<tr>
<td>Pinellas</td>
<td>109</td>
<td>71</td>
<td>372</td>
<td>117</td>
<td>669</td>
</tr>
<tr>
<td>Polk</td>
<td>203</td>
<td>224</td>
<td>439</td>
<td>375</td>
<td>1241</td>
</tr>
<tr>
<td>St. Lucie</td>
<td>267</td>
<td>241</td>
<td>558</td>
<td>480</td>
<td>1546</td>
</tr>
<tr>
<td>Sarasota</td>
<td>149</td>
<td>18</td>
<td>181</td>
<td>178</td>
<td>526</td>
</tr>
<tr>
<td>Seminole</td>
<td>285</td>
<td>342</td>
<td>486</td>
<td>256</td>
<td>1369</td>
</tr>
<tr>
<td>Volusia</td>
<td>302</td>
<td>154</td>
<td>505</td>
<td>447</td>
<td>1408</td>
</tr>
<tr>
<td>Other Counties</td>
<td>55</td>
<td>672</td>
<td>1485</td>
<td>4253</td>
<td>6465</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outside Florida</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater Atlanta</td>
</tr>
<tr>
<td>Greater Boston</td>
</tr>
<tr>
<td>Greater Chicago</td>
</tr>
<tr>
<td>Greater Los Angeles</td>
</tr>
</tbody>
</table>
however, might not have balanced the losses the county sustained to other parts of the nation between 1992 and 1993, when Andrew struck. Between those two years 45,519 more taxpayers and their exemptions left Dade County for other counties in the nation than arrived. During the following tax period (1993-1994) net migration fell to 32,185, considerably below the previous year, but still the second highest net migration experienced during the decade.

Most of Dade’s population loss during the 1990s to elsewhere in the nation has been to Broward County (58 percent), just to its north. The destruction to Dade County only increased an already large outflow. An undetermined number, but nonetheless large share, of those who leave Dade County for Broward continue to work in Dade. Several Florida counties that received unusually large net migrations of Miamians following Andrew were far beyond the commuter range of the city, and previous to Hurricane Andrew migration between them and Dade was reasonably balanced. Most absorbed military personnel who were evacuated from Homestead Air Force Base, which was almost destroyed by Andrew.

During the 1990s more people left Dade County to live in other Florida counties than left those counties to live in Dade County (Table 1). The single exception is Monroe County for 1990-91. People from several metropolitan areas elsewhere in the nation have continued to settle in Dade County in relatively large numbers. From the Greater New York metropolitan area, which includes communities in New Jersey and Connecticut, net migration to Dade County is approximately ten thousand each year. Net migration from the metropolitan areas of Los Angeles, Boston and Chicago is much smaller. It is impossible to identify the race or ethnicity of tax filers from the INS data. Nonetheless, it is likely that the movement into Dade from these cities is primarily from their Hispanic communities. Dade regularly sends more people to Greater Atlanta than it receives. Again, it is only speculation, but a significant share.
probably is of Dade’s African American population, leaving Miami for better employment opportunities.

People who left the county between 1992 and 1993 reported slightly over one-half billion dollars more income in 1993 than people who came to the county during that period. The loss to Dade County was 2.6 percent of the total income reported by those that remained in the county. The situation became worse between 1993 and 1994, despite a smaller net migration. In that tax period people who left the county reported almost 700 million dollars more than those who filed in Dade for the first time, or 3.3 percent of the income of those who remained in the county.

A contributing factor to this loss of income to Dade during these two years has been that those who come to Dade have reported an average income considerably less than those who leave. In the tax period between 1992 and 1993 it was 16 percent less, and between 1993 and 1994 it was 20 percent less. The loss to Dade of so many people, especially those with comparatively high income, assuredly has had an adverse effect upon Dade County’s economy. Dade’s loss, however, has brought economic benefits to the counties in which Dade residents have settled.
Book Review


Reviewed by Morton D. Winsberg

In 1988, while attending a Florida Society of Geographers meeting, I approached Jim Henry about a project that I had begun. Jim, a climatologist by education, was then a member of the faculty of the University of Florida's geography department. To both of our surprise we discovered that we were both engaged in writing books on Florida's weather and climate. Since I am not a physical geographer, but a weather hobbyist, I was writing a book for the novice. Jim's ambition was to write a more technical book. With a division of labor worked out we both proceeded independently on our projects. Jim read my book in manuscript form, and later I read his. My book appeared in 1990, and Jim generously reviewed it in the Professional Geographer. Because of health problems, and a career move to Tennessee, Jim's book was published four years later. It is just as well that my book appeared first, because had his been published before mine, or at the same time, there would have been little need to have written mine.

The Climate and Weather of Florida is organized into nine chapters, based on the major elements of weather. Following a brief introduction, there is a chapter devoted to sunshine, evaporation and the water budget. Chapters that follow are developed around (1) temperature, (2) pressure and winds, (3) humidity and clouds, (4) precipitation, (5) thunderstorms, (6) tropical storms and hurricanes, and (7) climate changes over time. There are appendixes that give monthly precipitation for thirteen weather stations, the Saffir/Simpson Hurricane Damage scale, and a checklist for hurricane safety procedure.

The first couple of chapters bring to fruition what the author expressed to me was his intent in writing the book. They are technical descriptions of weather processes, well known to meteorologist and climatologist, but difficult for the weather hobbyist to understand. Had the book continued in this fashion it would have become very heavy going for the nonprofessional. Fortunately, following these first few chapters, Henry and his co-authors changed ap-
Book Review

proach, and began to write more for the weather enthusiast. While the weather processes are not slighted, there are many excellent anecdotes about weather events in Florida that the reader will find of interest. The book concludes with a chapter on climate change over time, in which city climates are discussed, as well as air pollution, acid rain, past climates of Florida, and those we might expect in the future.

The book is generously illustrated with easily read maps, well selected photographs, and numerous tables. It certainly should become a reference in every university, college and public library in the state. In addition, it will provide much pleasure to those with an interest in the state's weather.
The Florida Society of Geographers was chartered in 1964 as a non-profit organization for the purpose of furthering professionalism in geography through application of geographic techniques in all areas of education, government, and business in Florida.

The society supports these objectives by promoting acquaintance and discussion among its members and with scholars and practitioners in related fields by stimulating research and field investigation, by encouraging publication of scholarly studies, and by performing services to aid the advancement of its members and the field of geography in Florida.

The society holds meetings once a year, usually in February. At this meeting, papers are presented and matters of mutual concern are discussed. Meetings are held in different parts of the state and always include field trips to allow participants to gain first hand knowledge through field experience.

Persons interested in membership in the Florida Society of Geographers should contact:

Richard Zeller
Secretary-Treasurer
Florida Society of Geographers
1344 Jackson St.
Tallahassee, FL 32303

Regular membership is $10 per calendar year; student membership is $5. Membership includes a subscription to this journal.