

# Tractors Versus Bulldozers: Integrating Growth Management and Ecosystem Services to Conserve Agriculture

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## Editors' Summary

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Many policies aimed at conserving agriculture have failed because they are not comprehensive enough. A successful program should seek to maintain agricultural viability, preserve ecosystem services, and manage development into desired areas. Growth management, the interdisciplinary expansion of land use planning, provides an institutional structure for this comprehensive solution. With its unparalleled natural resources, a strong agricultural industry, and one of the strongest growth management systems in the nation, Florida provides a perfect laboratory for integrating these concepts. The Rural Lands Stewardship Act and the Florida Ranchlands Environmental Services Project, used as case studies, show how progress is being made to integrate growth management and ecosystem services to conserve agriculture.

“With the possible exception of Alaska, no state’s economic sustainability is more closely linked to environmental sustainability than Florida. A healthy environment directly generates income . . . through the tourism industry, including boating, hunting, fishing, bird-watching, hiking, kayaking, ecotourism, and our beaches.”<sup>1</sup> But this burgeoning list neglects an important piece of the economic puzzle: agriculture.<sup>2</sup> Agriculture has an estimated \$100 billion economic impact on the state<sup>3</sup>—an amount equal to 14% of the state’s gross domestic product.<sup>4</sup> Florida produces more oranges, grapefruit, tangerines, and sugarcane than any other state; ranks second in all greenhouse and nursery products, sweet corn, and strawberries; and contributes a large proportion of the nation’s fresh market tomatoes, bell peppers, cucumbers, and watermelons.<sup>5</sup>

Economics is just one reason among many why communities, in Florida or elsewhere, may want to conserve agriculture. Other reasons include job retention, food security, healthy land development patterns, and rural and environmental amenities such as cultural maintenance, open space retention, and natural land buffering between competing land uses.<sup>6</sup> This Article does not argue whether a community should protect agriculture; while there is a rich literature on benefits communities derive from agriculture,<sup>7</sup> there are also inefficiencies and environmental costs associated with the decision to support or conserve agriculture.<sup>8</sup> However, because there is widespread public belief that conserving

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1. *Protecting Our Land and Waters*, FLORIDA TREND, Oct. 1, 2007.
2. The author uses the term “agriculture” in this Article in the broadest sense, encompassing silviculture and aquaculture, for the sake of simplicity. Note, though, that many studies addressed here do not explain whether they include these activities as a subset of agriculture or not. Whenever possible, this has been noted. This is unfortunate, since silviculture is the second largest agricultural industry group in the state, by economic impact. See ALAN W. HODGES ET AL., ECONOMIC CONTRIBUTIONS OF FLORIDA AGRICULTURE, NATURAL RESOURCES, FOOD AND KINDRED PRODUCT MANUFACTURING AND DISTRIBUTION, AND SERVICE INDUSTRIES IN 2006, at 9 tbl.1 (2008), available at <http://edis.ifas.ufl.edu/pdf/FE/FE70200.pdf>.
3. *Id.* at 21 tbl.4.
4. See Bureau of Economic Analysis, Gross Domestic Product by State, <http://www.bea.gov/regional/gsp/> (last visited June 5, 2008) (reporting a 2006 Florida gross domestic product (GDP) of \$716,505,000).
5. Florida Department of Agriculture and Consumer Services, Florida-Agriculture.com, Overview of Florida Agriculture, <http://www.florida-agriculture.com/agfacts.htm> (last visited May 6, 2009).
6. See Lori Lynch, *Protecting Farmland*, in LAND USE PROBLEMS AND CONFLICTS 279, 281 (Stephan J. Goetz et al. eds., 2005); Jeanne S. White, *Beating Plowshares Into Townhomes: The Loss of Farmland and Strategies for Slowing Its Conversion to Nonagricultural Uses*, 28 ENVTL. L. 113, 113 (1998).
7. See Lynch, *supra* note 6.
8. See David Abler, *Multifunctionality, Land Use, and Agricultural Policy*, in LAND USE PROBLEMS AND CONFLICTS 241 (Stephan J. Goetz et al. eds., 2005); J.B. Ruhl, *Farms, Their Environmental Harms, and Environmental Law*, 27 ECOLOGY L.Q. 263 (2000).

agriculture is in the best interests of the community,<sup>9</sup> policy-makers need to understand the best way to reach that goal.

Suppose that this decision has been left to the political process, and suppose a community has determined, as many do, that conserving agricultural lands is a desirable policy goal. What can be done? This Article argues that Florida is a particularly good place to begin searching for an answer. Florida's effort to conserve agriculture through growth management has been aided by integration of ecosystem services principles. While growth management in Florida has been lauded by some and criticized by others,<sup>10</sup> many have recognized that its agricultural policy needs work.<sup>11</sup> A nonprofit organization that supports comprehensive planning and smart growth, 1000 Friends of Florida, has noted that even though agriculture is one of the four critical elements of Florida's economy,<sup>12</sup> "[c]urrent state policy focuses on discouraging urban sprawl, but allows urban development to replace agriculture and open space without ensuring that the public benefits from these new developments."<sup>13</sup>

This Article argues for an interdisciplinary solution, combining ideas from agricultural and land economics, land use planning, and ecology in order to develop a legal framework for integrating them. Programs around the nation have failed because agriculture was considered from only one perspective. A successful agricultural conservation program must take into account the maintenance of agricultural viability, the preservation of ecosystem services, and the management of growth into desired areas. Growth management provides an institutional structure for this comprehensive view. Florida, with two little-known programs, is moving toward this integration. This Article fills a gap in the literature by providing the first in-depth analysis of these programs from such an interdisciplinary perspective.

This Article finds that Florida is warming to ecosystems services and is exploring ways to implement the concept to conserve agricultural land. At least two programs are already undergoing on-the-ground, local testing. Better integration with growth management concepts is needed, but together, the programs indicate that planners would be well advised to consider ecosystem services as a valuable tool for agricultural conservation. Without question, the challenges still facing the integration of growth management, ecosystem services, and agriculture are considerable. Florida provides a perfect

laboratory for study because it has a pair of promising programs within a state with unparalleled natural resources, a strong agricultural industry, and one of the strongest growth management systems in the nation. Dr. Sarah Lynch, of the World Wildlife Fund, has said, "there is no other state that demonstrates these challenges as much as Florida."<sup>14</sup> Unless land conservation policies and agricultural viability policies are consciously linked, "policies will more likely protect open spaces than the economic vitality of the working rural landscape."<sup>15</sup> More pragmatic, boots-in-the-mud research is needed to supplement the existing theoretical research. This Article works at putting theory into practice.

## I. Factual Background

### A. Agriculture: The Business of Nature

Agriculture in the United States is not threatened. Urban land, even when stretched to include non-farm rural residences, constitutes very little of the country's total area,<sup>16</sup> and agricultural lands have decreased by a relatively small proportion.<sup>17</sup> Consequently, rural and agricultural land policy is about the urban fringe: while the policies have "little observable impact" on the national land use tally, "they can make a profound difference in the quality of life at the margin, the interface between urban and rural land uses."<sup>18</sup>

Florida, having made the transition from a sleepy agricultural and natural state, has become a state of urban fringes, of this urban-rural interface. There are indications it may become yet more urbanized. In 2006, 1000 Friends of Florida released *Florida 2060: A Population Distribution Scenario for the State of Florida*,<sup>19</sup> which indicated that the state's population would double to 36 million people by 2060, if current growth patterns continue. The amount of urbanized land will also double, consuming 2.7 million acres<sup>20</sup> of the 10 million acres of agricultural lands in the state today.<sup>21</sup> This growth presents serious challenges to agriculture, since fringe agricultural land values average up to 18 times more when converted to suburban use.<sup>22</sup>

Agricultural viability consists of two components: first, the value of the land, and second, the profitability of the agriculture.<sup>23</sup> These are interconnected, but distinct. The value of land is influenced both by the market and by govern-

9. Lynch, *supra* note 6, at 281-82.

10. For a quick primer on growth management in Florida, see Parker Neils, *Pain in Paradise: Florida's Failed Fix-All*, FLA. ST. U. RES. REV., Winter/Spring 2008, at 12, available at [http://www.rin.fsu.edu/issues/2008spring/cover01\\_a.asp](http://www.rin.fsu.edu/issues/2008spring/cover01_a.asp). For the most comprehensive review of Florida's efforts to date, see GROWTH MANAGEMENT IN FLORIDA: PLANNING FOR PARADISE (Timothy S. Chapin et al. eds., 2007) [hereinafter PLANNING FOR PARADISE].

11. See, e.g., PLANNING FOR PARADISE, *supra* note 10; GEOPLAN CTR. AT THE UNIV. OF FLA., FLORIDA 2060: A POPULATION DISTRIBUTION SCENARIO FOR THE STATE OF FLORIDA (2006) [hereinafter POPULATION DISTRIBUTION], available at <http://www.1000friendsofflorida.org/PUBS/2060/Florida-2060-Report-Final.pdf>; CTR. FOR QUALITY GROWTH & REG'L DEV. AT THE GA. INST. OF TECH., A TIME FOR LEADERSHIP: GROWTH MANAGEMENT AND FLORIDA 2060 (2006) [hereinafter TIME FOR LEADERSHIP], available at <http://www.1000friendsofflorida.org/PUBS/2060/A-Time-for-Leadership-Report-Final.pdf>.

12. TIME FOR LEADERSHIP, *supra* note 11, at 34.

13. *Id.* at 3.

14. Telephone Interview with Dr. Sarah Lynch, FRESP Director, World Wildlife Fund (July 8, 2008).

15. Jesse J. Richardson Jr., *Beyond Fairness: What Really Works to Protect Farmland*, 12 DRAKE J. AGRIC. L. 163, 166 (2007).

16. Lawrence W. Libby, *Rural Land Use Problems and Policy Options: Overview From a U.S. Perspective*, in LAND USE PROBLEMS AND CONFLICTS, *supra* note 6, at 9, 13 (constituting only 6.1% in 1997—up from just 4.5% in 1980).

17. *Id.* at 12-14.

18. Libby, *supra* note 16, at 14.

19. POPULATION DISTRIBUTION, *supra* note 11, at 6.

20. *Id.* at 6, 22.

21. See Florida Department of Agriculture and Consumer Services, *supra* note 5.

22. See White, *supra* note 6, at 116.

23. NATHANIEL P. REED, 1000 FRIENDS OF FLORIDA, WORKING TO SUSTAIN FLORIDA'S RURAL AND NATURAL LANDS: A CALL TO ACTION 6 (2007), available at <http://www.1000friendsofflorida.org/PUBS/Rural/ruralreport.pdf>.

ment policies.<sup>24</sup> Land prices are important because, as they increase, those farmers who rent land must pay increasing amounts to use the land, and those farmers who own the land see this increase as an opportunity cost they must forego in order to continue farming.<sup>25</sup>

The second component, profitability, is important because agriculture, like any business, must earn return on its investment: “all agricultural production enterprises are commercial enterprises. In its essence, agriculture is about making a living.”<sup>26</sup> This is becoming increasingly apparent. Like many other sectors of the economy, agriculture is industrializing, applying techniques from modern industrial manufacturing, production, procurement, distribution, and coordination to the food production chain.<sup>27</sup>

The complete picture, however, is more complicated because, “[t]he economic forces shifting land out of farming run much deeper than pressure from urban uses.”<sup>28</sup> Eventually, Florida’s agriculture may reach a point of unsustainability. Critical mass theory predicts that an agricultural economy, to remain viable, must maintain a certain critical mass of activity, which is necessary to retain accessory economic activity.<sup>29</sup> Urban economists work on agglomeration suggests many jobs and industries are interrelated and need each other to function properly.<sup>30</sup> For agricultural land, this includes not only the farm workers, but also the farm managers, veterinarians, truck drivers, fertilizer producers, and so on.

Notwithstanding these challenges, this Article does not argue that agriculture should be “preserved.” If agriculture must yield to more profitable enterprises that create more wealth for a community and more efficient resource allocation, the answer should be, “so be it.” Even so, there are a number of economic and noneconomic arguments for conserving agriculture.<sup>31</sup> For instance, agriculture provides a source of food, fiber, and fuel.<sup>32</sup> In addition, agriculture

helps satisfy urban dwellers’ psychological demands for open space.<sup>33</sup> Agricultural lands also provide recreational opportunities.<sup>34</sup> Finally, agriculture can be a piece of a successful community growth management plan.<sup>35</sup> Communities are recognizing these noneconomic arguments and increasingly creating incentives so that they are taken into account by markets.<sup>36</sup>

## B. Ecosystem Services: Taking Account of Natural Infrastructure

Until recently, terms such as “rural amenities” were used to describe ecosystem services,<sup>37</sup> indicating a pleasant byproduct of rural and agricultural lands, but not something that could be analyzed independently. Attitudes are changing, however, and local governments are noticing this “ecological infrastructure” is as important as built infrastructure.<sup>38</sup> This is where ecosystem services, “created by the interactions of living organisms with their environment,”<sup>39</sup> are important. These vital services include purification of air and water, regulation of water flow, pollination of crops and natural vegetation, maintenance of biodiversity, climatic stabilization, and even aesthetic beauty, among many others.<sup>40</sup>

Not only are ecosystem services essential to our existence,<sup>41</sup> but they are also economically valuable. Healthy ecosystems provide a variety of goods and services,<sup>42</sup> which cumulatively are worth more to humans than the combined gross national product (GNP) for every nation on earth.<sup>43</sup> Environment provides these valuable services for free, when market substitutes would command high prices, if available at all.<sup>44</sup>

For several reasons, the value of ecosystem services is oftentimes not recognized in the marketplace or by regulators.<sup>45</sup> First, not only is the general public ignorant about the value of the services, but researchers lack knowledge about what policies can improve service provision.<sup>46</sup> Second, ecosystem services are public goods, arising from positive externalities of agricultural practices, making market formation

24. See Andrew Schmitz & Richard E. Just, *The Economics and Politics of Farmland Values*, in GOVERNMENT POLICY AND FARMLAND MARKETS: THE MAINTENANCE OF FARMER WEALTH 53, 53-55 (Charles B. Moss & Andrew Schmitz eds., 2003).

25. See Susan Offutt, *Forward: The Significance of the Value of Farmland*, in GOVERNMENT POLICY AND FARMLAND MARKETS: THE MAINTENANCE OF FARMER WEALTH, *supra* note 30, at xv-xvi.

26. John C. Becker, *Promoting Agricultural Development Through Land Use Planning Limits*, 36 REAL PROP. PROB. & TR. J. 619, 625 (2002).

27. *Id.* at 622.

28. Libby, *supra* note 16, at 9.

29. See Lori Lynch, *Critical Mass: Does the Number of Productive Farmland Acres or Farms Affect Farmland Loss?*, in ECONOMICS AND CONTEMPORARY LAND USE POLICY: DEVELOPMENT AND CONSERVATION AT THE RURAL-URBAN FRINGE 119 (Robert J. Johnston & Stephen K. Swallow eds., 2006) [hereinafter Lynch, *Critical Mass*]. See also Lori Lynch & Janet Carpenter, *Is There Evidence of a Critical Mass in the Mid-Atlantic Agriculture Sector Between 1949 and 1997?*, 32 AGRIC. & RES. ECON. REV. 116 (2003) [hereinafter Lynch & Carpenter, *Mid-Atlantic Sector*].

30. See Lynch, *Critical Mass*, *supra* note 29, at 119-21.

31. In this context, “conservation,” as distinguished from “preservation,” indicates the usefulness of agricultural lands to humans as a resource that can and should be exploited sustainably. It also recognizes stewardship—using land efficiently and ethically. For an overview of these differing environmental movements, see Adam Rome, *Conservation, Preservation, and Environmental Activism: A Survey of the Historical Literature*, <http://www.nps.gov/history/history/history/nps/NPSThinking/nps-oah.htm> (last visited May 6, 2009).

32. JULIAN CONRAD JUERGENSEMEYER & THOMAS E. ROBERTS, LAND USE PLANNING AND DEVELOPMENT REGULATION LAW 580 (2d ed. 2007).

33. *Id.* at 582.

34. *Id.*

35. See *id.* at 579, 597.

36. See *id.* at 578-93.

37. See, e.g., E.A. Machado et al., *Prioritizing Farmland Preservation Cost-Effectively for Multiple Objectives*, 616 J. SOIL & WATER CONSERVATION 250, 250 (2006).

38. M.S. Quinn & M.E. Tyler, *Integrating Ecological Infrastructure in Regional Planning: A Methodological Case Study From the Calgary Region of Western Canada* 3, available at <http://www.calgaryregion.ca/crp/media/16993/quinntyler%20ecomethodology.pdf>.

39. J.B. Ruhl & James Salzman, *The Law and Policy Beginnings of Ecosystem Services*, 22 J. LAND USE & ENVTL. L. 157, 157 (2007).

40. The Katoomba Group, *Payments for Ecosystem Services: Getting Started* (2008), [http://www.katoombagroup.org/~katoomba/learning\\_tools.php](http://www.katoombagroup.org/~katoomba/learning_tools.php). See generally NATURE’S SERVICES: SOCIETAL DEPENDENCE ON NATURAL ECOSYSTEMS (Gretchen Daily ed., 1997) (pioneering the study of ecosystems services).

41. James Salzman, *A Field of Green? The Past and Future of Ecosystem Services*, 21 J. LAND USE & ENVTL. L. 133, 133 (2006).

42. *Id.*

43. Robert Costanza, *The Value of the World’s Ecosystem Services and Natural Capital*, 387 NATURE 253, 259 (1997) (valuing ecosystem services at approximately 1.8 times the then-current world gross national product (GNP)).

44. Salzman, *supra* note 41, at 877.

45. Salzman, *supra* note 41, at 134.

46. *Id.*

difficult because everyone gets a benefit but no one has to pay.<sup>47</sup> Finally, because jurisdictional boundaries rarely align with ecological divisions, political institutions present collective action problems.<sup>48</sup>

Ecosystem services are not new: humans have been using these critical services for eons. But the novelty of the last decade—blending economics and ecology into one perspective—has had two important effects that have mitigated the difficulties mentioned above.<sup>49</sup> First, land management and conservation has been refocused into ordinary financial terms.<sup>50</sup> With this new understanding, it has been relatively easy to import economic, financial, and business management concepts, such as cost-benefit analysis, asset and income analysis, and portfolio management.<sup>51</sup> This aids the incorporation of ecosystem services into agriculture, with its progressively sophisticated business models and industrialized outlook, as well as into growth management, which has increasingly linked land use planning and capital budgeting.<sup>52</sup> Second, valuing ecological services allows the public to appreciate how much these services matter.<sup>53</sup> Public appreciation creates incentives for exploring investments in the services and their supporting systems.<sup>54</sup> Such information is crucial for functioning markets.<sup>55</sup>

The integration of ecosystem services and agriculture is known as multifunctionality. “Multifunctionality in an agricultural context recognizes that farms and ranches produce more than just commodities; they also produce a wide array of environmental goods and services.”<sup>56</sup> In other words, multifunctionality asserts that agricultural lands can be managed to produce normal commodities, such as food and fiber, along with ecosystem services.<sup>57</sup> This recognizes the second key factor in farm viability—profitability of the agriculture. In reality, multifunctionality is simply good business, recognizing “[t]he crops of today may not meet the needs of tomorrow.”<sup>58</sup> Yet in spite of its attractiveness, the multifunctional farm has not materialized because the status quo gives no incentives to transition from conventional models.<sup>59</sup>

## II. Legal Context

In cases of market failure, such as with ecosystem services, government involvement “has a critical role to play” in setting up market mechanisms and incentive structures.<sup>60</sup>

47. *Id.* at 135.

48. *Id.* at 136.

49. See Ruhl & Salzman, *supra* note 39, at 165.

50. *Id.*

51. *Id.*

52. See JUERGENSMEYER & ROBERTS, *supra* note 32, at 338-45.

53. See Ruhl & Salzman, *supra* note 39, at 165.

54. *Id.*

55. See Salzman, *supra* note 41, at 134.

56. William J. Even, *Green Payments: The Next Generation of U.S. Farm Programs?*, 10 *DRAKE J. AGRIC. L.* 173, 190 (2005).

57. J.B. Ruhl, *Agriculture and Ecosystem Services: Strategies for State and Local Governments*, 17 *N.Y.U. ENVTL. L.J.* 424, 432-33 (2008) (listing the ecosystem services a multifunctional farm might provide and describing these farms would differ from conventional farms).

58. REED, *supra* note 23, at 8.

59. Even, *supra* note 56, at 190-91.

60. Salzman, *supra* note 41, at 884.

Growth management may be able to provide this incentive structure. This Article argues that ecosystem services can be integrated into growth management to provide incentive-based tools to conserve agriculture. Two tools in particular are well-suited to that task: the Rural Land Stewardship Act (RLSA) and the Florida Ranchlands Environmental Services Project (FRESP). Before turning to an in-depth look at how these programs function, however, a brief introduction into growth management will provide some additional context.

### A. Conserving Agriculture Through Land Use and Growth Management

Land use tools alone have not been successful at conserving agriculture.<sup>61</sup> Traditional tools include agricultural (large-lot) zoning, agricultural and forestal districts, conservation agreements, and use-value assessments.<sup>62</sup> Many commentators continue to tout these tools despite a lack of supporting quantitative evidence.<sup>63</sup> Such uncritical analysis tends to muddle the issues. Traditional tools incorrectly focus exclusively on the land and omit the farmer.<sup>64</sup> They also incorrectly equate agricultural land and open space.<sup>65</sup> Finally, they do not support agricultural multifunctionality.<sup>66</sup>

Two tools that have shown promise in conserving agriculture through supporting farm multifunctionality are payment for ecosystem services and transferable development rights (TDR).<sup>67</sup> Payment for ecosystem services programs “involve a voluntary transaction where a external [sic] entity purchases an ecosystem service from a participating landowner whose land provides benefits to the local, regional or global environment.”<sup>68</sup> These programs have shown success in Costa Rican forests,<sup>69</sup> New York City’s catchment area,<sup>70</sup> and the Australian bush.<sup>71</sup> Payment for ecosystem services, correctly implemented, is neither a subsidy nor a payment for ecological benefits. It is a market-based payment for the services provided by agricultural land.<sup>72</sup>

TDR involves the “moving of development potential from one parcel of land to another.”<sup>73</sup> Hundreds of these programs have been documented across the country.<sup>74</sup> TDR promotes agricultural multifunctionality less obviously than payment

61. Richardson, *supra* note 15, at 166, 182.

62. *Id.* at 166-170. For detailed explanations of these tools—and some indication that they may not have been completely unsuccessful—see JUERGENSMEYER & ROBERTS, *supra* note 32, at 606-17; Elisa Paster, *Preservation of Agricultural Lands Through Land Use Planning Tools and Techniques*, 44 *NAT. RESOURCES J.* 283 (2004); White, *supra* note 6.

63. Richardson, *supra* note 15, at 167.

64. *Id.* at 164.

65. *Id.*

66. Ruhl, *supra* note 57, at 439.

67. *Id.* at 440.

68. Brian C. Steed, *Government Payments for Ecosystem Services—Lessons From Costa Rica*, 23 *J. LAND USE & ENVTL. L.* 177, 178 (2007).

69. See *id.*

70. Salzman, *supra* note 41, at 889.

71. *Id.* at 892.

72. See Ruhl, *supra* note 57, at 440.

73. TOM DANIELS, *WHEN CITY AND COUNTRY COLLIDE: MANAGING GROWTH IN THE METROPOLITAN FRINGE* 224 (1999).

74. See, e.g., RICK PRUETZ, *BEYOND TAKINGS AND GIVINGS: SAVING NATURAL AREAS, FARMLAND AND HISTORIC LANDMARKS WITH TRANSFER OF DEVELOPMENT RIGHTS AND DENSITY TRANSFER CHARGES* (2003).

for ecosystem services by tapping into development values to provide financial incentives to retain agriculture.<sup>75</sup> It also decreases development pressures on conserved lands.<sup>76</sup> TDR is especially useful because, unlike virtually all other agricultural conservation tools, farmers are paid without direct expenditure of public funds.<sup>77</sup>

While many tools may not have been successful alone, that is not to say they are useless: they must be integrated into a more comprehensive program. If a more integrated approach to conserving agriculture is necessary, perhaps the growth management structure presents a framework that would be amenable to the integration of agricultural conservation and ecosystem services. Growth management could be the best force for integration because it provides the “primary theme and coherence for land use regulation and environmental protection in the twenty-first century.”<sup>78</sup> Growth management, and its newer cousin smart growth, recognize and embrace the power of government to influence land use patterns.<sup>79</sup> They extend beyond traditional land use control devices, such as zoning and subdivision control.<sup>80</sup> If land use controls are the tools, growth management is not just the toolbox, but rather the experienced mechanic choosing the appropriate tools and how forcefully to use them.<sup>81</sup>

Just as agricultural conservation cannot be viewed as simply a land use problem, but must be seen as a conglomeration of perplexing issues, so too is conservation on an ecological scale not simply a land use problem. Craig Arnold, who argues for a broad understanding of land use law as an integrated system,<sup>82</sup> recognizes “the land use regulatory system can assist in conserving ‘nature’s capital’ but that it is not designed to do so in a systematic or complete way.”<sup>83</sup> But while there are serious barriers to pushing the system to take ecosystems into account, the land use regulatory system has the capacity to account for ecosystems services in several respects, not the least of which is its malleable nature that gives it the ability to take into account changing social needs.<sup>84</sup>

## B. Growth Management in Florida

Florida’s top-down growth management model establishes comprehensive planning at the state, regional, and local lev-

el.<sup>85</sup> Consistency requires plans to conform to one another at each level of government and across levels, such as between counties. Concurrency forces development permits to be predicated upon public facility and infrastructure adequacy.<sup>86</sup>

Agriculture and growth management interact in a number of ways in Florida. First, the State Comprehensive Plan has an explicit agricultural policy, stating: “Florida shall maintain and strive to expand its . . . agriculture . . . and related industries.”<sup>87</sup> The plan provides “long-range policy guidance for the orderly social, economic, and physical growth of the state” and “is intended to be a direction-setting document.”<sup>88</sup> Local governments, however, have discretion in how stringently they conform to the state plan.

Second, all comprehensive plans in Florida at least mention agricultural lands.<sup>89</sup> Each plan’s Future Land Use Element has local governments consider the proposed future distribution, location, and extent of agricultural uses.<sup>90</sup> Other elements, such as the Open Space Element, may require analysis of agriculture, as well.<sup>91</sup> Local governments are required to study their agriculture because comprehensive plans must be based on reliable analysis and data.<sup>92</sup>

Third, local governments have difficulty regulating, and maybe even reaching, agriculture because “agricultural activities are effectively exempt from state and local planning decisions, while the implementation of the measures used to preserve agricultural land are largely imposed on local government.”<sup>93</sup> Local governments are prohibited from enacting “any ordinance, resolution, regulation, rule, or policy” that intends to regulate a farm.<sup>94</sup> Such a rule effectively puts responsibility for dealing with environmental harms, and possibly ecosystem management, on the state.

Growth management in Florida brings together all the disparate land use tools into a comprehensive strategy. No one strategy is likely to work alone, but when the tools are combined, they can be mutually reinforcing. When “all techniques are choreographed,” they will be more effective than any one could be.<sup>95</sup> Agricultural multifunctionality, through FRESP and RLSA, may increase the effectiveness of today’s growth management efforts.

75. Ruhl, *supra* note 57, at 440.

76. See JUERGENSMEYER & ROBERTS, *supra* note 32, at 380-82.

77. *Id.* at 611 (discussing TDR specifically in relation to agriculture).

78. See *id.* at 318.

79. *Id.* at 320-24.

80. *Id.* at 317.

81. Many authors treat growth management as just another land use tool (perhaps calling it comprehensive planning or smart growth). See, e.g., Becker, *supra* note 26; Paster, *supra* note 62; Richardson, *supra* note 15. This approach is incorrect because it does not recognize growth management as having progressed beyond mere land use. See JUERGENSMEYER & ROBERTS, *supra* note 32, at 317.

82. See Craig Anthony (Tony) Arnold, *The Structure of the Land Use Regulatory System in the United States*, 22 J. LAND USE & ENVTL. L. 441, 441-49 (2007) (arguing that it is problematic to understand land use law in the traditional manner as a subset or hodgepodge of property, environmental, administrative, or local government law).

83. *Id.* at 511-12.

84. *Id.* at 510-22.

85. JUERGENSMEYER & ROBERTS, *supra* note 32, at 391. The primary legislative action was the Growth Management Act, Ch. 85-55, Laws of Fla. Many volumes have been written on the Florida story. For some of the best, see, JOHN M. DEGROVE, *PLANNING POLICY AND POLITICS: SMART GROWTH AND THE STATES* (2005); PLANNING FOR PARADISE, *supra* note 10; James C. Nicholas & Ruth L. Steiner, *Growth Management and Smart Growth in Florida*, 35 WAKE FOREST L. REV. 645 (2000).

86. JUERGENSMEYER & ROBERTS, *supra* note 32, at 391.

87. FLA. STAT. ANN. §187.202(22)(a) (West 2009).

88. FLA. STAT. ANN. §187.101(1), (2) (West 2009).

89. For a thorough analysis of the elements of Florida comprehensive plans and how agriculture applies to each, see Seth D. Chipman, *Preserving Open Space Through Agriculture—Part 1*, ENVTL. & LAND USE L. SEC. REP., Oct. 2005, at 1 [hereinafter Chipman, *Part 1*]; Seth D. Chipman, *Preserving Open Space Through Agriculture—Part 2*, ENVTL. & LAND USE L. SEC. REP. Jan. 2006, at 1.

90. Chipman, *Part 1*, *supra* note 89, at 17.

91. *Id.* at 17-18.

92. *Id.* at 16.

93. *Id.* at 18-19.

94. FLA. STAT. ANN. §163.3162(4) (West 2009).

95. JUERGENSMEYER & ROBERTS, *supra* note 32, at 602.

### III. Case Studies

James Salzman observed that while scholarship has developed a good theoretical understanding of ecosystem service provisioning, “[t]he problem is that theory and practice often have not been effectively joined so that one meaningfully informs the other.”<sup>96</sup> In response, this Part sets out the details of two interesting and innovative programs, and Part IV works to explain the programs through the background and legal context provided above.

#### A. Florida Ranchlands Environmental Services Project

While Lake Okeechobee may traditionally have been the “liquid heart” of the Everglades, today’s extensive ditch and dike network running across South Florida and around the lake have slowed its pulse to dangerously low levels.<sup>97</sup> The drainage network has proven quite successful at facilitating settlement, development, and agricultural production, but ecosystems in South Florida face severe challenges because of it.<sup>98</sup>

In an effort to restore the ecosystem, which extends from the Kissimmee River Basin to Lake Okeechobee and Florida Bay, federal and state initiatives have poured money into the area.<sup>99</sup> The Comprehensive Everglades Restoration Plan (CERP) is a federal-state partnership project to design a wide-ranging plan for the water resources of Central and South Florida, including the Everglades.<sup>100</sup> The Lake Okeechobee Protection Act,<sup>101</sup> which established the Lake Okeechobee Protection Plan and the Northern Everglades and Estuaries Protection Program,<sup>102</sup> established a protection and restoration plan for the lake and surrounding watersheds. These existing programs use public funding to purchase land and construct water treatment lands and facilities.<sup>103</sup>

FRESP,<sup>104</sup> consisting of 8,500 acres,<sup>105</sup> may one day serve as a complement to existing restoration programs by compensating farmers for ecosystem service provision.<sup>106</sup> FRESP is a payment for ecosystem services pilot program designed to test whether cattle ranchers near Lake Okeechobee can provide ecosystem services more cost effectively than by building new public works projects.<sup>107</sup> A 2004 conceptual study of 850,000 acres in central Florida, collaboratively written and funded by the World Wildlife Fund (WWF), state agencies, ranchers, and researchers, predicted not only that they could,

but also that implementation would be quicker than by using regional treatment facilities and large reservoirs.<sup>108</sup> The study also described the difficulties of establishing a payment for ecosystem services program and what would be needed to overcome these problems.<sup>109</sup>

WWF concluded state agencies could purchase water retention services, phosphorus load reduction services, and wetlands habitat expansion services for less than the cost of building new infrastructure.<sup>110</sup> Each service corresponds to a particular need. Water retention addresses unnatural “shock” flooding of estuaries and the lake, securing water in ranch soils, lowlands, and ditches in years when rainfall is high. This allows for control of the volume, pattern, and timing of water flows to Lake Okeechobee, meaning historic patterns can be recreated.<sup>111</sup> Phosphorous load reduction responds to the high level of phosphorous and other nutrients in waters, which is mainly caused by both agricultural and urban non-point sources, sequestering phosphorous in ranch wetland and upland soils, decreasing nutrient levels in the water when it eventually flows off-site.<sup>112</sup> This high nutrient level is a principle cause of low dissolved oxygen levels and extensive algal blooms, both of which can be harmful to humans and other animal and plant life. Wetlands habitat expansion promotes habitat provision, among a host of other ecosystem services, by restoring lands to historic-quality wetlands, many of which have been drained over the past centuries.<sup>113</sup>

To test these ideas, FRESP was launched in 2005 as a collaborative effort between WWF and private and public partners,<sup>114</sup> including private ranchers spanning three counties,<sup>115</sup> the MacArthur Agro-Ecology Research Center, South Florida Water Management District (SFWMD), Florida Department of Agriculture and Consumer Services (FDACS), and Florida Department of Environmental Protection.<sup>116</sup> The University of Florida’s Institute of Food and Agricultural Sciences has provided technical assistance.<sup>117</sup>

108. See SARAH LYNCH ET AL., FINAL REPORT: ASSESSING ON-RANCH PROVISION OF WATER MANAGEMENT ENVIRONMENTAL SERVICES 1 (2005) (copy on file with author); Woods, *supra* note 99, at 15.

109. LYNCH ET AL., *supra* note 123, at 7-9.

110. See Lynch & Shabman, *supra* note 112, at 17.

111. *Id.* at 17-19.

112. *Id.* This is important, since a 2015 target set by the U.S. Environmental Protection Agency will require a 68-80% reduction in phosphorous loads in waters entering Lake Okeechobee. Woods, *supra* note 99, at 18.

113. Lynch & Shabman, *supra* note 112, at 17-19.

114. Ruhl, *supra* note 57, at 446.

115. The four original ranches were Alderman-Deloney Ranch (Okeechobee County), Buck Island Ranch (Highlands County), Lykes Bros., Inc. (Glades County), and Williamson Cattle Company (Okeechobee County). In 2007, four additional ranches were added: C.M. Payne & Son, Inc. (Highlands County); Lightsey Cattle Company (Highlands County); Rafter T Ranch (Highlands County); and Syfrett Ranch West (Okeechobee County). Woods, *supra* note 99, at 16; E-mail Interview with Dr. Sarah Lynch, FRESP Director, World Wildlife Fund (Aug. 23, 2008).

116. Memorandum from Deena Reppen, Dir., Office of Gov’t and Pub. Affairs, to S. Fla. Water Mgmt. Dist. Governing Bd. Members (Aug. 6, 2007) (copy on file with author) [hereinafter Reppen].

117. Woods, *supra* note 99, at 18. See also, J.M. Neumann and M.W. Clark, Okeechobee Isolated Wetlands: Influences of Hydroperiod and Cattle on Vegetation, [http://www.nova.edu/ocean/cpce/uf\\_vegetation.pdf](http://www.nova.edu/ocean/cpce/uf_vegetation.pdf) (last visited May 6, 2009) (explaining some of the scientific methods being used to evaluate program success).

96. Salzman, *supra* note 41, at 875.

97. See Sarah Lynch & Leonard Shabman, *The Florida Ranchlands Environmental Services Project: Field Testing a Pay-for-Environmental Services Program*, RE-SOURCES, Spring 2007, at 17, 17.

98. *Id.*

99. See Chuck Woods, *Partnerships for Sustainable Agriculture*, IMPACT, Spring 2008, at 13, 13.

100. See Water Resources Development Act of 2000, Pub. L. No. 106-541, §601.

101. FLA. STAT. ANN. §373.4595 (West 2009).

102. See *id.*

103. Woods, *supra* note 99, at 15.

104. FRESP refers to environmental services. These are ecosystem services. See Steed, *supra* note 68, at 202 n.1.

105. This is only the acreage directly affected by FRESP, and *not* the total project impact area. Telephone Interview with Dr. Sarah Lynch, *supra* note 14.

106. See Lynch & Shabman, *supra* note 112, at 17.

107. See *id.*

FRESP's funding attests to a broad interest in payment for ecosystem services. Original funding of \$2.3 million came from various sources. WWF received a Conservation Innovation Grant from the U.S. Department of Agriculture Natural Resources Conservation Service, with SFWMD, FDACS, and WWF providing matching funds for project implementation.<sup>118</sup> Later, the 2006-07 Florida Legislature also provided SFWMD with \$2 million more specifically to support FRESP.<sup>119</sup> Total funding now exceeds \$5 million from state, federal, and private sources.<sup>120</sup>

The purpose of FRESP is to "design, field test and evaluate components of a performance-based program for securing [ecosystem services]" because "[a] well designed performance-based program will produce measurable benefits to the environment and be profitable for ranchers, cost-effective for tax payers, easily administered, and replicable in other regions and watersheds."<sup>121</sup> Performance, however, is established in reference to regulatory baselines. Rather than compensating ranchers to comply with state and federally mandated water quality standards, the compensation in FRESP is based on service provision greater than those standards.<sup>122</sup>

In an effort to achieve this, participation is structured as a contractual relationship among collaborating agencies and individual ranchers. Contracts "outline the conditions under which [ranchers] will be reimbursed for the planning, design, permitting, construction and equipment, and operation and maintenance of a [project] they construct on their ranch."<sup>123</sup> Beyond these reimbursements for startup and implementation costs, participating ranchers also receive an annual participation fee.<sup>124</sup> Ranchers are responsible for WMA design, installation, and implementation of their Water Management Alternatives (WMA) sites. WWF and its partners are handling implementation and operation of the monitoring equipment. All FRESP partners are contributing to the design of a scaled-up program.<sup>125</sup>

FRESP implementation is in two phases. Phase I, for design and testing, lasted until 2009.<sup>126</sup> This phase had three objectives.<sup>127</sup> First, (WMAs) will be operated on each ranch, including rehydrated wetlands, pasture water management, and stormwater treatment impoundment. WMAs are simply the different methods used to produce desired ecosystem services.<sup>128</sup> Second, transparent and credible ways to measure private ecosystem services will be developed. Third, operating rules will be developed for a market-based, pay-for-

performance program. Phase II, for scale-up and transition, lasts until 2011 and will test the operating rules developed in Phase I, with transition afterwards to open FRESP to the rest of the Northern Everglades region.<sup>129</sup>

FRESP is making timely progress toward program goals. A documentation methodology is being developed and field tested to capture several key ecosystem services provided by these on-ranch WMAs.<sup>130</sup> In addition, buyers and sellers are making much progress on the definition of the services.<sup>131</sup> Design of all WMAs has been completed, and one-half have been built, with the remainder to be constructed soon.<sup>132</sup> This includes, for example, the placement of water control structures, filters, and pumps.

### B. Rural Land Stewardship Act<sup>133</sup>

In 2001, the Florida Legislature enacted RLSA as an incentive-based planning tool for rural areas.<sup>134</sup> Rural land stewardship areas (RLS areas) must include a minimum of 10,000 acres and must be located outside of any municipalities and established urban growth boundaries.<sup>135</sup> The incentive structure of RLSA rewards landowners who protect sensitive and important areas, while allowing development in more appropriate areas. RLSA is also intended to be, to some degree, an alternative to Florida's most recognized large-scale planning procedure, the Development of Regional Impact.<sup>136</sup>

RLSA is a voluntary part of Florida's comprehensive planning process and is meant to work in concert with it. Local governments adopt a RLSA comprehensive plan amendment as an overlay to the Future Land Use Map in order to establish an RLS area. This amendment establishes program specifics, including how stewardship credits are created and used, the processes and criteria for sending and receiving areas, and how the program will integrate with current local government practices.<sup>137</sup> The overlay facilitates the incentive-based nature of RLSA, allowing designation of specific sending and receiving areas to be determined by community preferences and the land market on a parcel-by-parcel basis.<sup>138</sup>

118. Woods, *supra* note 99, at 18.

119. *Id.*

120. World Wildlife Fund, Florida Ranchlands Environmental Services Project (FRESP), <http://www.worldwildlife.org/what/globalmarkets/agriculture/FRESP.html> (last visited May 6, 2009).

121. See Reppen, *supra* note 116.

122. Woods, *supra* note 99, at 15.

123. See Reppen, *supra* note 116.

124. *Id.*

125. E-mail Interview with Dr. Sarah Lynch, *supra* note 115.

126. World Wildlife Fund, *supra* note 120.

127. World Wildlife Fund et al., FRESP: Lake Okeechobee Watershed, [http://www.archbold-station.org/ABS/maerc/MAERC%20docs/FL%20Enviro%20Ser%20Project\\_one%20pager.pdf](http://www.archbold-station.org/ABS/maerc/MAERC%20docs/FL%20Enviro%20Ser%20Project_one%20pager.pdf) (last visited May 6, 2009).

128. For a complete list of WMAs considered, see LYNCH ET AL., *supra* note 108, at 10.

129. Telephone Interview with Dr. Sarah Lynch, *supra* note 14.

130. E-mail Interview with Dr. Sarah Lynch, *supra* note 115.

131. *Id.*

132. Telephone Interview with Dr. Sarah Lynch, *supra* note 14.

133. Much of the information in this section comes from a series of reports analyzing RLSA (in-depth for the first time since implementation), which were prepared for the Florida Department of Community Affairs by the Florida Planning and Development Laboratory, Department of Urban and Regional Planning, Florida State University, in the summer of 2007. The author acted as research associate for this work. For histories of RLSA and both county programs that are much more detailed than here or in any other source, see TIM CHAPIN & HARRISON HIGGINS, RURAL LAND STEWARDSHIP AREA (RLSA) PROGRAM CASE STUDIES: COLLIER COUNTY & ST. LUCIE COUNTY (2007) (copy on file with author).

134. FLA. STAT. ANN. §163.3177(11)(d)(2) (West 2009).

135. FLA. STAT. ANN. §163.3177(11)(d)(4) (West 2009).

136. FLA. STAT. ANN. §380.06(24)(m) (West 2009) (exempting, under some circumstances, RLS areas from the DRI process). For a more in-depth analysis of Florida's different approaches to large-scale planning, see TIM CHAPIN ET AL., COMPARISON OF FLORIDA'S APPROACHES TO LARGE-SCALE PLANNING: DRIS, RLSAs, OSPs, AWDRI, AND SAPs (2007) (copy on file with author).

137. CHAPIN & HIGGINS, *supra* note 133, at 4-5.

138. *Id.* at 5. Additionally, to allow the program to quickly respond to market forces, "pursuant to [FLA. STAT. §163.3187(1)(n)], the usual twice per year limita-

Each RLS area functions much like a traditional TDR program. RLSA establishes a “transferable rural land use credits” system, within which stewardship credits can be transferred.<sup>139</sup> Stewardship sending areas (SSAs) are allocated transferable credits, which can then be transferred to stewardship receiving areas (SRAs).<sup>140</sup> Credits are allocated to SSAs by a formula based on acreage and natural resource values for lands that an owner pledges to conserve.<sup>141</sup> The transferable credits are freely tradable and may be used in SRAs to develop land at greater densities than the underlying land development regulations would normally allow.<sup>142</sup> The biggest differences between TDR and RLSA are that RLSA credit generation is entirely voluntary and that RLSA has strong ties to farm multifunctionality.<sup>143</sup>

To date, although many RLS areas have been proposed,<sup>144</sup> only one RLSA comprehensive plan amendment has been enacted, in St. Lucie County.<sup>145</sup> Collier County, however, developed a rural lands program concurrently with the Florida Legislature’s development of RLSA.<sup>146</sup> Though this program is not subject to the requirements of the RLSA statute,<sup>147</sup> it is so similar that it should be considered under any analysis of RLSA.<sup>148</sup> Because the Collier County program predates the St. Lucie County RLS area, I begin with it.

Under the statute, local governments have broad powers to develop systems that best fit their needs. Given the Florida Growth Management Study Commission’s findings that innovative and creative solutions are needed to respond to local problems and that one size rarely fits all,<sup>149</sup> this may have been intentional.<sup>150</sup> However, Florida’s Department of Community Affairs (DCA), the state agency in charge of growth management, has noted the program’s challenges and problems,<sup>151</sup> and the agency is developing an administrative rule in response.<sup>152</sup>

## I. Collier County

Collier County is probably best known for its award-winning beaches, the extensive art galleries and shopping in Naples,

and having the most golf holes per capita in the nation.<sup>153</sup> Less well known, however, is that Florida’s largest county, which was founded on a grant to a New York land tycoon in exchange for a road-building project, also contains some of the state’s most pristine natural lands and most productive agricultural lands.<sup>154</sup> At least 80% of its lands have been preserved, including Everglades National Park and Big Cypress National Preserve.<sup>155</sup>

These natural and agricultural lands are facing intense growth pressures. From 2001-2006, real gross domestic product (GDP) in Collier County grew by 23%, and agriculture declined slightly as a share of the economy, from 2.8 to 2.4%.<sup>156</sup> From 2002-2007, agricultural land in Collier County decreased 39%.<sup>157</sup> The county’s population has more than doubled since 1990.<sup>158</sup> In response to these pressures, Collier County adopted its nearly 200,000-acre Rural Lands Stewardship Area Overlay in 2002. The area covers much of the county’s agricultural land in the northeast, and surrounded, but did not include, the inland town of Immokalee.

The overlay was the result of a long planning process. In 1997, the DCA had rejected the county’s proposed plan amendments because they failed to protect, inter alia, natural resources.<sup>159</sup> An administrative appeal ended favoring the DCA.<sup>160</sup> The county proposed down-zoning all agricultural and sensitive lands, but when landowners threatened lawsuits, the county began working with the landowners, along with planning consultants and conservation groups.<sup>161</sup> When an agreement was formed, the Florida Administration Commission approved it and ordered the Collier County Rural and Agricultural Area Assessment.<sup>162</sup>

In late 1999, Collier County formed the Rural Lands Assessment Area Oversight Committee to comply with this order. The oversight committee conducted its analysis using a four-step process, painstakingly assuring public involvement at each step.<sup>163</sup> First, it collected and analyzed study area

tion on comprehensive plan amendments does not apply when establishing or implementing a RLSA.” *Id.* at 4.

139. FLA. STAT. ANN. §163.3177(11)(d)(6) (West 2009).

140. *See* FLA. STAT. ANN. §163.3177(11)(d)(6)a-k (West 2009).

141. *Id.*

142. *Id.*

143. Ruhl, *supra* note 57, at 450-51.

144. Florida Department of Community Affairs, Division of Community Planning, Rural Land Stewardship Area Program, <http://www.dca.state.fl.us/fdcp/dcp/rurallandstewardship> (last visited May 6, 2009).

145. FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS, RURAL LAND STEWARDSHIP PROGRAM 2007 ANNUAL REPORT TO THE LEGISLATURE I (Dec. 31, 2007) [hereinafter, ANNUAL REPORT].

146. CHAPIN & HIGGINS, *supra* note 133, at 5.

147. ANNUAL REPORT, *supra* note 145, at 1.

148. *Id.*

149. FLORIDA’S GROWTH MGMT. STUDY COMM’N, A LIVEABLE FLORIDA FOR TODAY AND TOMORROW: GROWTH MANAGEMENT STUDY COMMISSION FINAL REPORT 43-46 (2001).

150. CHAPIN & HIGGINS, *supra* note 133, at 2.

151. *See, e.g.*, ANNUAL REPORT, *supra* note 145.

152. *See* Florida Department of Community Affairs, Proposed Rule 9J-5.026, <http://www.dca.state.fl.us/fdcp/dcp/rurallandstewardship/Files/RLSADraftRule.pdf> (last visited May 6, 2009) [hereinafter Proposed Rule].

153. The Greater Naples Chamber of Commerce, Fun Facts, <http://www.naples-chamber.org/lifestyle/naples-fun-facts.aspx> (last visited May 6, 2009).

154. The Greater Naples Chamber of Commerce, *supra* note 153.

155. *Id.*

156. This does not include forestry or aquaculture and analyzes Naples-Marco Island MSA, which includes all of Collier County. U.S. Department of Commerce, Bureau of Economic Analysis, Gross Domestic Product by Metropolitan Area, <http://www.bea.gov/regional/gdpmetro/> (Select Step 1 “Real GDP,” Step 2 “Naples-Marco Island MSA,” Step 3 “All Industries,” Step 4 “2006” and “2001,” and Step 5 “Display HTML.” Author computed percentages using data at lines [001] and [003].) (last visited May 6, 2009).

157. U.S. Department of Agriculture, National Agriculture Statistics Service, 2007 CENSUS OF AGRICULTURE—COUNTY PROFILE COLLIER, FLORIDA I, available at [http://www.agcensus.usda.gov/Publications/2007/Online\\_Highlights/County\\_Profiles/Florida/cp12021.pdf](http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/County_Profiles/Florida/cp12021.pdf).

158. U.S. Census Bureau, Population Finder, <http://factfinder.census.gov> (Click “population finder” on left, then search for “Collier County, Florida” on right. Population data appears in middle of page.) (last visited May 6, 2009).

159. *Briefly Speaking*, COMMUNITY PLANNING (Florida Department of Community Affairs, Tallahassee, Fla.), Winter 1999, at 3.

160. *Id.*

161. CHAPIN & HIGGINS, *supra* note 133, at 7-8.

162. *See Briefly Speaking*, *supra* note 159, at 3. *See also* Fla. Administration Comm’n, Final Order No. AC-99-022 (giving as one goal: “[i]dentify and propose measures to protect prime agricultural areas. Such measures should prevent the premature conversion of agricultural lands to other uses.”).

163. RURAL LANDS ASSESSMENT AREA OVERSIGHT COMM., REPORT AND RECOMMENDATIONS OF THE COLLIER COUNTY RURAL LANDS ASSESSMENT AREA OVERSIGHT COMMITTEE FOR THE IMMOKALEE LAND STUDY I-9 (2002) (pro-

data, with the aid of consultants and state agencies, resulting in the most detailed set of land use and land cover maps of such a large area in the state of Florida.<sup>164</sup> Second, the committee generated a forecast of what the area would look like in 2025 if the county did nothing. Third, from this baseline, the committee evaluated alternative scenarios, eventually selecting one to pursue further that it predicted would reduce agricultural and natural land conversion by 90%.<sup>165</sup> Finally, based on the chosen scenario and upon the existing area's development potential, the committee developed a credit exchange rate methodology.<sup>166</sup> In late 2002, when everyone, including the DCA and environmental nonprofit organizations, was satisfied with the plan, Collier County adopted the overlay into its comprehensive plan and land development code.<sup>167</sup>

If RLSA is a bare-bones policy instrument, Collier County first gave it life. At first, the program seems to offer few differences from the statute. Until a landowner elects to participate in the program, the original, baseline land development regulations prevail.<sup>168</sup> The underlying zoning for most of these lands is agricultural, which naturally allows for agriculture and accessory uses, but also allows for residential development at a density of up to one dwelling unit per acre.<sup>169</sup> If a landowner opts to participate, lands must be designated as SSAs or SRAs.<sup>170</sup> In exchange for a perpetual stewardship easement,<sup>171</sup> landowners designating SSAs are allocated stewardship credits. These stewardship credits can then be exchanged for additional development rights in SRAs.<sup>172</sup> Locations of SSAs and SRAs are determined by market forces and program incentives, but there are some restrictions, based mostly on environmental concerns.<sup>173</sup>

Collier County, though, took the stewardship credit idea and developed a unique policy tool. Stewardship credits function as a financial incentive because they are "commoditized" legal entitlements.<sup>174</sup> The county has built priorities into its incentive structure for awarding credits. Credit allo-

cation is determined on an acre-by-acre basis by two primary factors and two secondary factors. First, the agricultural zoning base is divided into eight zoning layers, with residential as the most intensive and conservation as the least intensive.<sup>175</sup> The landowner may remove individual layers successively, in exchange for credits; removing all layers down to conservation yields one base credit, and each layer above yields a fractionally smaller base credit.<sup>176</sup>

Second, each acre is evaluated by the Natural Resource Index, which aims to state the public value, in comparative term, of natural resources of a particular property.<sup>177</sup> The index takes into account environmental (overlay) designation,<sup>178</sup> proximity to sensitive lands and preservation areas, listed species habitat, soils and surface water,<sup>179</sup> restoration potential,<sup>180</sup> and land cover. Each has an index value, and when multiple factors are present, as is frequently the case, the index values are added. This value is multiplied by the base credit value, yielding up to three credits per acre for the most sensitive properties.<sup>181</sup>

The secondary factors are early entry and restoration. The early entry bonus provides up to one credit for critical habitat acreage for the first five years, with a cap of 27,000 bonus credits.<sup>182</sup> These may not be used within the Big Cypress Area of Critical State Concern. Restoration stewardship credits are allocated for flow-way or habitat restoration and may be used like normal credits.<sup>183</sup> Up to eight credits are allocated for the highest priority lands, if the owner bears restoration costs under government supervision; interestingly, up to four credits are available if the owner agrees to maintain the land after

viding a comprehensive report on the committee's methods, results, and conclusions), available at [www.colliergov.net/modules/ShowDocument.aspx?documentid=15116](http://www.colliergov.net/modules/ShowDocument.aspx?documentid=15116).

164. The study covered about 190,000 acres. *Id.* at 14.

165. The baseline scenario would also consume nine times as much land and cost the county millions of dollars more in infrastructure and urban service provision. The chosen scenario was evaluated against simpler, more traditional payment for development rights and TDR programs. *Id.* at 27-29.

166. There is some question over whether a build-out plan led to the credit methodology or not. ANNUAL REPORT, *supra* note 145, at 8.

167. COLLIER COUNTY, FLA., COMPREHENSIVE PLAN, FUTURE LAND USE ELEMENT §II.D [hereinafter FUTURE LAND USE ELEMENT], available at <http://www.colliergov.net/Index.aspx?page=257> (click link: \*Future Land Use Element) (last visited May 6, 2009); COLLIER COUNTY, FLA., LAND DEVELOPMENT CODE §4.08.00, available at <http://www.colliergov.net/Index.aspx?page=1515> (click link: 4.08.00) (last visited May 6, 2009).

168. FUTURE LAND USE ELEMENT, *supra* note 184, §II.D.1.4.

169. COLLIER COUNTY, FLA., LAND DEVELOPMENT CODE §2.03.01.A.

170. FUTURE LAND USE ELEMENT, *supra* note 184, §II.D.1.6.

171. These easements are similar to agricultural or conservation easements, "in which landowners encumber their property in perpetuity by permanently giving up certain developmental and land-use rights. The easement agreement spells out the rights the landowner gives up and those retained." CHAPIN & HIGGINS, *supra* note 133, at 14.

172. FUTURE LAND USE ELEMENT, *supra* note 184, §II.D.1.14.

173. *See generally id.* §II.D.3.

174. CHAPIN & HIGGINS, *supra* note 133, at 14-15.

175. The layers are (1) residential, (2) general conditional, (3) earth mining and processing, (4) recreational, (5) agriculture group 1 [intensive farming such as row cropping], (6) agriculture support uses, (7) agriculture group 2 [less intensive practices such as natural grazing and silviculture], and (8) conservation. COLLIER COUNTY, FLA., LAND DEVELOPMENT CODE §4.08.06.B.4.

176. *Id.*

177. COLLIER COUNTY, FLA., LAND DEVELOPMENT CODE §4.08.01.R; CHAPIN & HIGGINS, *supra* note 133, at 15.

178. Chapin and Higgins state:

Overlay designation indicates whether land has been designated as a Flow Way Stewardship Area (FSA), Habitat Stewardship Area (HSA), Water Retention Area (WRA), or Area of Critical State Concern (ACSC). FSAs form the area's primary wetland flow way systems, and are not surface water systems, but rather are systems that have sheet flow that remains mostly in the ground. HSAs form the area's primary natural habitat for listed species and include some areas that are not natural but help comprise this system because they contain connect natural areas. WRAs are agricultural water retention areas that provide surface water quality and other natural resource value. ACSCs are areas designated by the Florida Legislature as needing protection of resources and public facilities that are of major statewide significance (Ch 380.05, F.S.). In Collier County, this is the Big Cypress ACSC.

CHAPIN & HIGGINS, *supra* note 133, at 16.

179. This indicates which of four soil types are present: open water and muck depression; sand depression; flats; or non-hydric. *Id.*

180. This indicates whether land has potential as restored land because of historic use or character. *Id.*

181. *See* COLLIER COUNTY, FLA., LAND DEVELOPMENT CODE §4.08.06.B.5.

182. The county wanted to avoid "a lack of significant demand in the early years of implementation" and to recognize a "public benefit [that] would be realized by the early designation of SSAs." FUTURE LAND USE ELEMENT, *supra* note 184, §II.D.1.21 (providing for one credit for lands within a HSA but outside the ACSC, but only 1/2 credit for lands within a HSA but inside the ACSC, where lands are already more protected).

183. *Id.* §II.D.3.11.

allowing the government to pay for restoration.<sup>184</sup> Based on all factors, the most unusually sensitive acreage might receive up to twelve credits.

Credits can be exchanged for SRA designation at a flat rate of eight credits per net acre.<sup>185</sup> Landowners have significant flexibility in using stewardship credits for development, but SRAs have some important limitations: they may not be established on lands designated as sensitive or important, they must be near a significant road (or the developer must provide equivalent access), financial feasibility must be proven for any relevant local government, and only compactly organized projects are allowed.<sup>186</sup>

Administrative procedures for the RLS area have been integrated into Collier County's development review process. The board of county commissioners must approve SSA and SRA applications.<sup>187</sup> Designation as an SSA or SRA is considered an administrative change, not a comprehensive plan amendment, meaning the DCA does not get to review designation decisions.<sup>188</sup> Because the same information on development plans is required, SRA designation serves as the preliminary development order.<sup>189</sup> Similarly, if the state designates an SRA as a Development of Regional Impact,<sup>190</sup> then the county considers the SRA and DRI concurrently.

As of June 13, 2008, of the nearly 200,000 acres within the RLS area, ten SSAs had been approved, totaling about 27,823 acres.<sup>191</sup> From this, 73,487 credits were generated, meaning each protected acre yielded approximately 2.6 credits,<sup>192</sup> significantly less than the 12 possible credits. All of this acreage was protected permanently as agriculture, save 651 conservation acres and 85 acres in land use layers higher than agriculture.<sup>193</sup> One 4,000-acre SRA, the Town of Ave Maria, was approved.<sup>194</sup> Within this SRA, 1,027 acres are to the public benefit, such as university land uses.<sup>195</sup> Another SRA, the Town of Big Cypress, was pending and will increase SRA acreage by 2,798 to 6,798.<sup>196</sup>

As of March 13, 2009, 13 SSAs were approved, for a total of 42,756 acres, and two more SSAs of 12,208 acres were pending.<sup>197</sup>

184. *Id.*

185. COLLIER COUNTY, FLA., LAND DEVELOPMENT CODE §4.08.01.KK. Certain land uses, such as civic spaces, are taken out of gross acreage. See CHAPIN & HIGGINS, *supra* note 133, at 18.

186. See CHAPIN & HIGGINS, *supra* note 133, at 18.

187. FUTURE LAND USE ELEMENT, *supra* note 184, §II.D.1.15.

188. See *id.* §II.D.1.6.

189. CHAPIN & HIGGINS, *supra* note 133, at 19.

190. See FLA. STAT. ANN. §380.06 (West 2009).

191. See RURAL LANDS STEWARDSHIP REVIEW COMM., RURAL LANDS STEWARDSHIP AREA FIVE-YEAR REVIEW: PHASE I—TECHNICAL REVIEW 6 (2008), available at <http://www.colliergov.net/Index.aspx?page=2300>; Collier County Growth Management, 6-13-2008 RLS SSA Land Characteristics Summary and Credits and Debits (2008) (copy on file with author).

192. See Collier County Growth Management, *supra* note 191.

193. See RURAL LANDS STEWARDSHIP REVIEW COMM., *supra* note 208, at 6; Collier County Growth Management, *supra* note 191.

194. See RURAL LANDS STEWARDSHIP REVIEW COMM., *supra* note 208, at 8; Collier County Growth Management, *supra* note 191.

195. See RURAL LANDS STEWARDSHIP REVIEW COMM., *supra* note 208, at 8.

196. *Id.*

197. Collier County Stewardship Sending Areas (March 13, 2009), <http://www.colliergov.net/Modules/ShowDocument.aspx?documentid=23720>.

## 2. St. Lucie County

Though St. Lucie County is not as well known as Collier County, like it, St. Lucie County faces intense growth pressures, especially to its expansive western agricultural areas. From 2002-2007, lands being farmed decreased 31%.<sup>198</sup> Real GDP in the area grew by 34%, and farms seemed to be struggling, decreasing as a share of the economy 1.2 to 0.8% from 2001-2006.<sup>199</sup> St. Lucie County has accommodated 77% population growth since 1990.<sup>200</sup>

St. Lucie County adopted its 22,384-acre RLS area as an overlay on its future land use map in 2006.<sup>201</sup> Like Collier County, St. Lucie County uses a mixture of SSAs, from which credits are generated, and SRAs, which are integrated into the county's growth management system. Also like Collier County, a complex credit generation takes account of community preferences. Because the overlay is remarkably similar to Collier County's,<sup>202</sup> it will suffice here to sketch the significant differences between the two programs.<sup>203</sup>

The most obvious difference between the two programs is that St. Lucie County's relatively small RLS area is not contiguous. Adams Ranch, one of the largest cow-calf operations in the nation, which constitutes three-fourths of the RLS area, is three miles away from the only other property, Cloud Grove. Little information is available about the origins of St. Lucie County's program and its noncontiguous nature, but it appears to have been driven by the owners of Adams Ranch and the would-be developers of Cloud Grove, with surrounding landowners hedging their bets and waiting to see what would come of the process.<sup>204</sup> From the beginning, the plan seems to have been to conserve the Adams Ranch property while developing Cloud Grove.<sup>205</sup> Collier County's RLS area, however, is nearly 10 times larger and is one contiguous area, excluding the Immokalee urban area in its center. Because Collier County had been required by the DCA

198. U.S. Department of Agriculture, National Agriculture Statistics Service, 2007 CENSUS OF AGRICULTURE—COUNTY PROFILE ST. LUCIE, FLORIDA I, available at [http://www.agcensus.usda.gov/Publications/2007/Online\\_Highlights/County\\_Profiles/Florida/cp12111.pdf](http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/County_Profiles/Florida/cp12111.pdf).

199. This does not include forestry or aquaculture and analyzes Port St. Lucie MSA, which includes all of St. Lucie County, as well as Martin County. U.S. Department of Commerce, Bureau of Economic Analysis, Gross Domestic Product by Metropolitan Area, <http://www.bea.gov/regional/gdpmetro> (Select Step 1 "Real GDP," Step 2 "Port St. Lucie MSA," Step 3 "All Industries," Step 4 "2006" and "2001," and Step 5 "Display HTML." Author computed percentages using data at lines [001] and [004].) (last visited May 6, 2009).

200. U.S. Census Bureau, Population Finder, <http://factfinder.census.gov> (Click "population finder" on left, then search for "St. Lucie County, Florida" on right. Population data appears in middle of page.) (last visited May 6, 2009).

201. St. Lucie County, Fla., Ordinance 06-031 (Sept. 12, 2006).

202. CHAPIN & HIGGINS, *supra* note 133, at 29 (explaining that, while the similarities may come from the interactions of RLSA and existing regulations or from similar local circumstances, they most likely come from "the presence of a number of key consultants and organizations that have worked on both projects and used a basic idea to address a different set of problems in these counties").

203. *Id.* at 29-31. For a more critical view of the programs and their differences, see ANNUAL REPORT, *supra* note 145.

204. Telephone Interview with Mr. Ernest Cox, J.D., President, Family Lands Remembered, LLC (July 11, 2007). Mr. Cox was instrumental in developing RLSA concepts through representing landowner interests in both RLS areas.

205. See Family Lands Remembered, How the Stewardship Program Works, <http://familylandsremembered.com/how-works.html> (last visited May 6, 2009).

and an executive order to study its rural lands, and because the planning process had been initiated by a motivated group of property owners, the program evolved into an areawide comprehensive planning initiative.

Another principle difference between the programs involves the stewardship credit calculation methodology. Like Collier County, St. Lucie County SSAs generate credits based on primary and secondary factors. The methodology for primary factors is similar, though the actual values are different. St. Lucie County divides the baseline agricultural zoning into layers, which can be successively removed down to the least intensive land use to yield up to one base credit.<sup>206</sup> St. Lucie County also uses the Natural Resources Index to evaluate the natural resources value of each acre, taking into account land cover and land use, soils and surface water, listed species, and environmental (overlay) characteristics.<sup>207</sup> The Natural Resources Index is multiplied by the base credit value to yield up to 2.8 credits for the most sensitive acreage.

Secondary methods of credit generation are much different. First, while both county overlays include restoration credits, St. Lucie County landowners receive far fewer credits from restoration activities and must undertake the project themselves,<sup>208</sup> but this may be mitigated somewhat because St. Lucie County's restoration credits seem to be available for a wider range of activities. Restoration covers a wide range of activities, from conversion of high-intensity agricultural uses to lower intensity agricultural uses with habitat value, to enhancing wildlife corridors or restoring wetlands,<sup>209</sup> while in Collier County, restoration credits have a wetlands focus and may only be allocated for flow-way or habitat restoration.<sup>210</sup>

Other secondary methods are unique to each plan. Only Collier County has early entry bonus credits. St. Lucie County, on the other hand, includes wildlife corridor credits, cultural heritage stewardship credits, and agriculture stewardship credits. Wildlife corridor credits provide up to one-half credit for lands that connect, or will connect with landowner restoration, fragmented listed species habitats into a suitably large area.<sup>211</sup> Cultural heritage credits apply one-half credit to areas identified by the State Historical Commission or, ambiguously, to areas identified by the board of county commissioners as having been culturally significant

to the county for 50 years or more.<sup>212</sup> Finally, one agriculture credit is conveyed to acreage in active agriculture operation, from which land use layers down to agriculture group 1 or 2 have been removed. This means the maximum credits generated for the most sensitive acre in St. Lucie county is 7.5.<sup>213</sup> These differences in maximum credit generation per acre are displayed below.<sup>214</sup>

Credit type	Collier	St. Lucie
Natural resource [base] credits	3.0	2.5
Restoration credits	8.0	3.0
Early entry bonus credits	1.0	x
Cultural heritage stewardship credits	x	0.5
Agriculture stewardship credits	x	1.0
Wildlife corridor credits	x	0.5
Maximum potential credits	12.0	7.5

Similar to Collier County, SRAs in St. Lucie County are developed through the county's traditional land development review process.<sup>215</sup> SRAs must be planned in a compact, balanced manner.<sup>216</sup> A flat rate of seven credits per acre is necessary to entitle SRA development.<sup>217</sup> Unlike Collier County, St. Lucie County has limited the possible total amount of residential dwelling units to 13,428.<sup>218</sup>

Two years in, the St. Lucie County RLS area has struggled to become viable. While an application for multiple SSAs has been submitted, it is on hold, and an application for the SRA, which also included a DRI application, was recently withdrawn; therefore no credits have been generated, much less changed hands.<sup>219</sup> Recently, DCA reported that it was helping St. Lucie County reevaluate its rural lands policies and the county had adopted a report for its comprehensive plan stating:

Since the adoption of the Rural Land Stewardship [Area], the County's attitude towards the RLSA program has changed significantly as the trade-offs between preservation [and development] of large tracts of land well outside the urban service boundary have become better understood. The County may consider completely removing the current

206. The layers are slightly different from Collier County, though the intent is clearly the same: (1) residential; (2) general and conditional; (3) earth mining and processing; (4) agriculture group 1; (5) agriculture group 2; and (6) restoration and natural resources. St. Lucie County, Fla., Ordinance 06-031(8) (Sept. 12, 2006).

207. See CHAPIN & HIGGINS, *supra* note 133, at 25.

RLSA Overlay characteristics indicate whether land has been designated as a Habitat Stewardship Area (HSA), Hydrologic Stewardship Area (HYSA), Water Retention Area (WRA), or an space not otherwise designated (open space). HSAs and HYSAs form the area's primary natural habitat for listed species and include some areas that are not natural but help comprise this system because they connect natural areas. WRAs are agricultural water retention areas that provide surface water quality and other natural resource value, while HYSAs are the primary wetland hydrologic systems in the RLSA Overlay.

*Id.*

208. See ST. LUCIE COUNTY, FLA., COMPREHENSIVE PLAN, RURAL LAND STEWARDSHIP AREA OVERLAY §3.8 [hereinafter STEWARDSHIP AREA].

209. *Id.*

210. See FUTURE LAND USE ELEMENT, *supra* note 184, §II.D.3.11.

211. STEWARDSHIP AREA, *supra* note 226, §§3.8, 3.9.

212. *Id.* §§1.9, 2, 2.6.

213. *Id.* §1.9; St. Lucie County, Fla., Ordinance 06-031(6) (Sept. 12, 2006).

214. This chart is borrowed from CHAPIN & HIGGINS, *supra* note 133, at 30. Note that while 2.8 is actually the maximum in St. Lucie County, some extra credits cannot be earned when all land use layers are removed. Thus, 2.5 is used, since the purpose of this chart is to demonstrate the maximum possible credits generated.

215. CHAPIN & HIGGINS, *supra* note 133, at 26; STEWARDSHIP AREA, *supra* note 226, §§1.4-1.21.

216. CHAPIN & HIGGINS, *supra* note 133, at 26; See STEWARDSHIP AREA, *supra* note 226, §§4.6.1, 4.6.2.

217. See STEWARDSHIP AREA, *supra* note 226, §4.18.

218. ANNUAL REPORT, *supra* note 145, at 14.

219. Interview with Robert Pennock, Strategic Planning Coordinator, Florida Department of Community Affairs (July 10, 2008); Telephone Interview with Ernest Cox (July 11, 2008), *supra* note 204.

policies regarding the RLSA from the Comprehensive Plan and land development code.<sup>220</sup>

## IV. Analysis and Recommendations

It may be too early to evaluate these programs properly. FRESF is still a pilot project. RLSA in Collier County has only just now undergone its first five-year comprehensive citizen-led review.<sup>221</sup> RLSA in St. Lucie County looks to have been abandoned before it ever truly began. These cases are important, however, because of the limited literature on how growth management, ecosystem services, and agriculture relate to each other and because of the almost nonexistent literature about programs integrating them in practice.

E.A. Machado et al. present an interesting approach to integrating the concepts, recognizing the need to keep any conceptual framework simple.<sup>222</sup> “Planning is a social process that is as much art as science,” which has little tolerance for decisionmaking methods that are too complex to be effective.<sup>223</sup> After reviewing the literature and existing programs, the authors identified three primary objectives for successful agricultural conservation programs: (1) maintain agricultural viability; (2) preserve ecosystem services; and (3) manage growth into desired areas.<sup>224</sup> To determine whether FRESF and RLSA have been—or can be—successful, the programs can be evaluated in terms of these three objectives.

Each objective can be evaluated using multiple criteria,<sup>225</sup> which recognize many of the concepts introduced in this Article. For agricultural viability, this means preserving the most productive land. This recognizes the efficiencies of land uses, agriculture as a business, and the necessity of a critical mass of agricultural land. For preserving ecosystem services, this means recognizing and supporting the various types of services. This recognizes agricultural multifunctionality, the necessity of market forces, and the shift from amenities to services. Finally, managing growth means reinforcing comprehensive planning and growth management measures. This recognizes the move to comprehensive growth management from earlier, more simplistic land use models and the interactions between rural and urban areas. The framework even addresses agricultural “disamenities,” or undesirable products (such as environmental harms), since producing less of these complements production of desirable goods and services.<sup>226</sup> For example, controlling environmental harms,

such as nonpoint water pollution, might be re-characterized as provision of an ecosystem service.

### A. Maintenance of Agricultural Viability

Both FRESF and RLSA support the conservation of agriculture by maintaining its viability through market mechanisms, though FRESF will do so more directly.<sup>227</sup> The program is being developed with potential buyers in mind. Federal and state governments, interested in an opportunity to save, eagerly support the project. Ranchers—always fiercely independent—have complete autonomy over whether they will participate or not, and if so, how and where to do so. They need not be forced, coerced, or beaten down and will reward the government by cooperating, rather than reaping “the last harvest” and moving on.<sup>228</sup> The sale of any one service will not be a panacea, instantly allowing tractors to compete with bulldozers. Even so, it will provide another income stream to the agriculturalist and allows those uses to continue. It also brilliantly employs market forces: as an area develops and agricultural land comes under more pressure as land values rise, the value of the land’s ecosystem services should rise, as these services simultaneously become scarcer from diminishing supply, and demand increases. Hence, payment for ecosystem services hedges against development that would harm agriculture.

It does not appear that RLSA is maintaining agricultural viability. Collier County’s comprehensive plan discusses agriculture in the context of RLSA, but not with the specificity needed.<sup>229</sup> DCA has insisted emphatically Collier County’s program does not because most of the land within the SRA was originally agriculture.<sup>230</sup> Collier County’s analysis shows that over 5,000 acres have been converted out of agriculture.<sup>231</sup> While it is difficult to show whether this was the result of RLSA, it seems telling that every type of agriculture has decreased, and fallow land has risen by 10%.<sup>232</sup> In an area with such agricultural productivity, this trend should be worrisome—perhaps indicating agriculture is becoming less viable, and farmers and ranchers are simply quitting. None of this, however, should be surprising considering the incentive structure Collier County has chosen. It may be able to identify and protect the most environmentally sensitive lands, as the executive order required the county to do, but there is no incentive to protect the most productive agricultural lands. Indeed, agriculture seems to be more of an open holding zone, waiting for development.

St. Lucie County’s program might have had more success, since it would have allocated credits based on agricultural

220. FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS, RURAL LAND STEWARDSHIP PROGRAM 2008 ANNUAL REPORT TO THE LEGISLATURE I (March 9, 2009) available at <http://www.dca.state.fl.us/fdcp/dcp/rurallandstewardship/Files/RLSA2008AnnualReport.pdf>.

221. As this Article was going to press, Collier County was in the process of releasing documents from this review and determining how to move forward. Updates on the review committee’s work can be found at <http://www.colliergov.net/Index.aspx?page=2300>.

222. Machado et al., *supra* note 37, at 257.

223. *Id.*

224. *Id.* at 251. Machado et al. use the term “farmland preservation,” but the concept can be extended to encompass husbandry generally.

225. *Id.* at 251-52.

226. *See id.* at 257.

227. Again, understand that both programs are of such recent vintage that this section, particularly, is as much prediction based on observations as it is on-the-ground analysis. Like all financial decisions, though, agricultural viability is based as much on predictions about future profitability as it is about the analysis of the present, so that new information about the predicted future can change present analyses.

228. *See* WITOLD RYBCZYNSKI, LAST HARVEST 34 (2007).

229. FUTURE LAND USE ELEMENT, *supra* note 184, §II.D.2.

230. ANNUAL REPORT, *supra* note 145, at 9.

231. STEWARDSHIP AREA, *supra* note 208, at 11.

232. *Id.*

use. The program, though, appears to be dying, but it is unclear whether the cause is politics or economics.<sup>233</sup> What is clear, however, is that while RLSA has been implemented in a broadly similar manner in Collier County and St. Lucie County, the differences in the credit generation schemes show that RLSA design could be used to support agriculture to a greater or lesser degree.<sup>234</sup>

### B. Preservation of Ecosystem Services

Additionally, both FRESP and RLSA preserve ecosystem service provisioning, and it is difficult to say which has done better. FRESP is developing a market to preserve ecosystem service provisioning.<sup>235</sup> Ranchers in south Florida are combining entrepreneurial zeal and regulatory concern, while shifting to multifunctional agriculture. They are learning that productivity is no longer only about crop and cattle production but also about the ecosystem services provided. This appears to be a unique project because, unlike most payment for ecosystem services programs that pay landowners for *practices*, FRESP will pay for the services ranchers actually *produce*.<sup>236</sup> Thus, FRESP has taken an important step toward treating agriculture as a business: ranchers will have an incentive to invest in methods of increasing service provisions. Investing could occur in two ways: through technological innovation, with ranchers developing more efficient methods of providing services, or through productivity increases, with ranchers using, and perhaps buying, the most productive lands for providing services. In this way, FRESP contributes directly to Everglades restoration, which benefits many more than just those in the immediate vicinity.

Theoretically, “RLSA strikes a chord very close to the farm multifunctionality theme.”<sup>237</sup> The program’s six explicit goals—(1) Restoration and maintenance of the economic value of rural land; (2) Control of urban sprawl; (3) Identification and protection of ecosystems, habitats, and natural resources; (4) Promotion of rural economic activity; (5) Maintenance of the viability of Florida’s agricultural economy; and (6) Protection of the character of rural areas of Florida<sup>238</sup>—go beyond the traditional land use-exclusive focus of agriculture conservation programs. Indeed, credits “may be assigned at different ratios of credits per acre according to the natural resource or other beneficial use characteristics of the land and according to the land use remaining following the transfer of credits, with the *highest number of credits per acre assigned to the most environmentally valuable*

*lands or, in locations where the retention of open space and agricultural land is a priority, to such lands.*”<sup>239</sup>

This is already occurring in Collier County. Because the Natural Resources Index provided information about natural resources and ecosystem values, the area’s most sensitive lands are being preserved.<sup>240</sup> If all pending SSAs are approved, as is likely, then most of the sensitive wetland ecosystems within the area will have been preserved, largely intact. Early entry bonuses may have played a role in kick-starting the market.

### C. Management of Growth Into Desired Areas

Finally, both FRESP and RLSA support growth management, though RLSA has been more successful so far. Some planning procedures have taken FRESP into account. Growth management in Florida is intricately linked with water supply planning.<sup>241</sup> SFWMD plans to use FRESP to meet some of its 10-year strategic plan goals.<sup>242</sup> This plan serves as the blueprint for carrying out legislative mandates to manage and protect water and land resources,<sup>243</sup> making it important for regional water supply planning. One of the major priorities of the plan is Northern Everglades protection and restoration.<sup>244</sup> Another goal, albeit broader, is the overall restoration and protection of Lake Okeechobee and related estuaries.<sup>245</sup> FRESP supports these goals, through the storing and treatment of runoff on private lands.<sup>246</sup> The Lake Okeechobee Watershed Construction Project Phase II Technical Plan, which was prepared as a part of the Northern Everglades and Estuaries Protection Program,<sup>247</sup> included FRESP in a preferred plan for projected projects.<sup>248</sup>

The professional planning community, however, has failed to consider FRESP as a tool and integrate it into growth management systems. The state’s growth management agency has not been involved, local government planners have not been in contact with the program director to learn about it,<sup>249</sup> and local government comprehensive plans have not recognized FRESP.<sup>250</sup> Such lack of interest is odd, considering the potential gains if the program succeeds. Granted, FRESP has not been designed with growth management per se in mind, and as a pilot program, FRESP still may be able to interact with comprehensive planning. Yet these caveats do change the conclusion that planners need to move beyond thinking like

239. FLA. STAT. ANN. §163.3177(11)(d)(4)(j) (West 2009) (emphasis added).

240. STEWARDSHIP AREA, *supra* note 208, at 24.

241. *See, e.g.*, Florida Department of Community Affairs, Division of Community Planning, Water Supply Planning, <http://www.dca.state.fl.us/fdep/DCP/WaterSupplyPlanning/index.cfm> (last visited May 6, 2009).

242. *See* Reppen, *supra* note 116.

243. S. FLA. WATER MGMT. DIST., BUDGET IN BRIEF FY 2006-07 (2006) (on file with author).

244. *See* Reppen, *supra* note 116.

245. *Id.*

246. *Id.*

247. S. FLA. WATER MGMT. DIST. ET AL., LAKE OKEECHOBEE WATERSHED CONSTRUCTION PROJECT PHASE II TECHNICAL PLAN 1-1 (2008).

248. *Id.* at 9-10. Though inclusion in this plan does not imply or guarantee federal or state funding, it certainly implies FRESP is being taken seriously by Florida, and if successful, will be incorporated into Everglades planning.

249. Telephone Interview with Dr. Sarah Lynch, *supra* note 14.

250. None of the comprehensive plans of counties where FRESP is located mention FRESP.

233. The project’s DRI application, required for any development to take place, was recently withdrawn. Interview with Robert Pennock, *supra* note 219.

234. DCA’s draft rule proposes to strengthen RLSA’s connection with agriculture by, for example, explaining the purpose of RLSA is to encourage “landowners to permanently conserve agricultural lands, and ecosystems, habitats, and natural resources in return for development credits to be used on other suitable RLSA land.” Proposed Rule, *supra* note 167, at 1.

235. Of course, the market is not yet fully developed. Today, ranchers are being paid for their role as experimenters and land provisioners during price discovery. All indications point towards the formation of a viable marketplace. Telephone Interview with Dr. Sarah Lynch, *supra* note 14.

236. *Id.*

237. Ruhl, *supra* note 57, at 450.

238. FLA. STAT. ANN. §163.3177(11)(d)(2) (West 2009).

simple managers of land use issues and become broader managers of growth in all its facets. Indeed, these caveats implore planners to become involved now, before institutions have cemented around FRESP and reduced its flexibility.

RLSA, however, was an integrated part of Florida's growth management process from the start. The statute was developed around the same time as Collier County's program, when a rural-agricultural committee the governor had formed was looking for ways to better support agriculture using growth management.<sup>251</sup> As a result, RLSA was treated as another tool in the growth management toolbox, to be put into comprehensive plans. Both counties fit RLSA into preexisting growth management and land use planning institutions. The Collier County area has already been combined with the Stewardship District, another interesting growth management concept combining special governmental districts with conservation planning.<sup>252</sup>

One of the controversial aspects of RLSA, and a great weakness of the program, has been that the statute leaves many land use policy and implementation questions unanswered.<sup>253</sup> The statutory language is so broad that it could be used as a way to circumvent, rather than support, the current regime. Additionally, even if a local government had good intentions and interest in RLSA, such broad language gives little guidance in designing these areas. Many local governments and landowners will not be able to afford as much consulting as it has taken to design existing areas. These are likely among DCA's concerns as it develops a draft rule. The rule is intended to establish departmental rules for RLS area designation and to provide guidance to local governments and others.<sup>254</sup> Even so, the draft rule must strike a delicate balance. Restrictions making the program less flexible that were included in the first draft were thrown out due to public criticism. The latest version of the rule could actually increase RLSA's flexibility, since it will provide certainty in the local development process, and because it allows for multiple ways of demonstrating the need for development and financial feasibility.<sup>255</sup> Certainly, though, landowners will not gamble with RLSA until the rule is developed, which is understandable, when the rule development has been ongoing for years, and the agricultural community actively campaigned against the second iteration of the rule developed by DCA.<sup>256</sup>

## V. Conclusion

Growth management proponents are pushing for an integration of comprehensive planning, ecosystem services, and

agriculture: "It must be economically viable for Florida's working lands to remain in agriculture, and for this to happen, we must embrace the market. Florida must adopt more innovative ways to leverage the economic engine of growth, creating value by linking together community development, agriculture and conservation."<sup>257</sup> With few exceptions, however, ecosystem services are not integrated parts of strategic policy and planning at the local government level around the world.<sup>258</sup> FRESP and RLSA are beginning to do just that. Considering both programs, Florida is making progress integrating growth management and ecosystem services to conserve agriculture.

These tools begin with different conceptual foundations; yet they cross paths in the unexplored intersection of growth management, ecosystem services, and agriculture. While it is too early to draw final conclusions, FRESP and RLSA both show promise conserving agriculture and promoting ecosystem services. FRESP shows more progress integrating agriculture and ecosystem service provision, though only limited effort has been made to integrate the program with growth management. RLSA, however, shows more progress integrating growth management and ecosystem services, even if there has been difficulty conserving agriculture. These cases make clear a new policy movement is afoot—in Florida, just as there is across the nation—to develop agricultural multifunctionality, not only to support agricultural policy, but also to contribute to the environmental well-being of ecosystems.<sup>259</sup>

Surely, each program could improve. In a perfect world, Florida would support FRESP throughout the state for a dozen different ecosystem services. RLSA would be expanded so that credits could be transferred regionally, from rural land to urban. To do this, however, the first step must be to prioritize lands based on their ecosystem service and agricultural value. Florida is already taking steps in the right direction, having rolled out a series of maps, to be improved over time, which provide these values and give policymakers a way to prioritize conservation programs.<sup>260</sup> These programs do not need to be regulatory or by public acquisition. Policymakers now have an instrument based in science that may allow for the development of even more innovative tools. With such exciting developments, two possibilities are on the horizon: first, other states should begin to unlock the benefits of the multifunctional farm and growth management. Second, with luck, Florida will be able to develop a statewide or regionwide planning process that will conserve the working landscape at an unprecedented ecological scale.

251. See CHAPIN & HIGGINS, *supra* note 133, at 1.

252. See Ch. 2004-461, Laws of Fla.; Ave Maria Stewardship Community District, Mission Statement, <http://www.avemariadistrict.com/About.asp> (last visited May 6, 2009).

253. See Ruhl, *supra* note 57, at 451.

254. See Proposed Rule, *supra* note 152.

255. See *id.* at 17.

256. When the Farm Bureau and others challenged the rule in an administrative hearing, DCA opted to draft a third version of the rule. More information is available for the ongoing development at <http://www.dca.state.fl.us/fdcp/dcp/rurallandstewardship/>.

257. REED, *supra* note 23, at 8.

258. Quinn & Tyler, *supra* note 38, at 1.

259. See Ruhl, *supra* note 57, at 424.

260. The Critical Lands & Water Identification Project has recently published its Phase I report and rolled out an online geographic information system for viewing the data set. See Century Commission for a Sustainable Florida, Current Projects, [http://www.centurycommission.org/current\\_projects.asp](http://www.centurycommission.org/current_projects.asp) (last visited May 6, 2009).