

Urban Agriculture and the Green-Collar Citizen

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ABSTRACT

The current state of affairs in the agricultural sector of the Greater Binghamton region is that of a great leap forwards. The region has prided itself in being a silent innovator, once home to both the Endicott Johnson Shoe Factory and International Business Machines. The ecological trend that the world has been experiencing can be traced to several initiatives, including the Earth Day initiative and that of 2007's Live Earth. These efforts have translated in modern times globally. The organic food movement and "green" architecture were spawned from these early efforts. In order to stimulate the Binghamton economy, it is not enough to simply ride an eco-trend. It is simply time for the Greater Binghamton Region to innovate in the emerging green-collar economy by establishing the urban hydroponics greenhouse and the Non-profit-for-profit collective.

Key Words: Urban Agriculture, Non-profit-for-profit collective (NPFPC), green-collar citizen, green-collar economy

Local Key Words: Cornell Cooperative Extension, The EarthBox Project

INTRODUCTION

The turn of the twenty-first century was marred with an economic downturn, that eventually was declared an economic recession. But, this need not affect our expectations for a bright innovative future. Rather, it is in times of depression that American ingenuity shines through. Hence, instead of riding an economic downtrend, it is important that Binghamton establishes itself as a trend-setter, both to revitalize its economy and to usher in a new green-collar revolution.

TRACKING THE TREND

With all that in mind, it is paramount for this paper to prove and affirm that the matter of sustainability and the carbon footprint has been an issue for a while. Its integration into society has been met with both skepticism and temporary zeal. The first case of noticeable green advocacy during the latter half of the 20th Century will be the case of Earth Day. It was declared in 1969 by Capitol Hill politicians, but first practiced in 1970 and subsequently on April 22nd of every year and stands as a

testament to ecologically friendly living, that and an example of how not to handle an ecological movement. Observance of Earth Day has dwindled since then (Dowie, 1996). The question many scholars ask is what prevented the full-blown success of Earth Day, but I think a more relevant question is to ask what made it an initial success. A combination of open knowledge, popular drug usage, and the issuing of the Global Warming theory were responsible for its initial success (Woodson et al., 2005). Its failure is due to the fact that only one of its original general components is still in practice. That is, open knowledge is still in practice to this day. It is then fruitful to look at a recent ecological event that also did not live up to its potential.

Al Gore's Live Earth concert was promoted as humanity's call to action. It boasted various musicians of different genres and ideologies, all coming together to cajole the public into hearing the green call. Unfortunately, attendance at Live Earth proved to be abysmal, and its television ratings were equally unpromising. According to the Herald Sun, Live Earth's ratings were lower than that of a telecasting of a children's animated movie (Flat Ratings for Live Earth, 2007). It is best to analyze why Live Earth failed in order to determine why it also failed to usher in creative rebirth. The first glaring problem with Live Earth was that it required a large amount of energy to operate. It generated an even larger carbon footprint than it hoped to decrease. Another problem was that the music at Live Earth did not always correspond to the ideas of the concert. Musicians had their own agendas (Live Earth-Rock-Review, 2007). Lastly, Live Earth relied on the same four combinations that Earth day had relied on. Unfortunately, for Al Gore, the internet had spread knowledge so evenly among the public that they did not need his concern to obtain information about the Green movement. Simply, the rise of the Information Technology age has made information about global warming mainstream

and easily accessible.

From both cases of serious attempts at creative rebirth, there exists one commonality, the existence of open knowledge. The sharing and facilitating of knowledge is essential towards establishing any new movement. There is no greater institution for the sharing of knowledge than the university. To put simply, a university is an academic institution. According to Richard Florida, universities are hotspots of innovation and intellectualism (Florida 2002). Florida believes that universities are capable and willing to work with real industries to develop ideas for the future. However, he does not account for petty jealousy and bureaucracy in both the University system and the industrial sector. In a study conducted during the 1990s at a Finnish university, it was discovered that industrial-university relations were far more difficult to maintain than previously contested (Tuunainen 2005). Tuunainen claims this new organization is best labeled as a "hybrid firm". A professor at the University of Helsinki had created a revolutionary new practice in the science of horticulture, during its early phases, by introducing gene therapy to seedlings. What ensued from this discovery is a legal battle between an industry that claimed patents, and a university that claimed they infringed intellectual property rights. Hence, the issue of open knowledge must be addressed in the most neutral method possible. There have been no recorded methods of addressing it from my own research of scholarly articles, though I do have a plan to do so.

I have already discussed the weaknesses of several green movements due to the concept of open knowledge. It is now that I offer a somewhat successful case of a green movement. During the early 20th Century, community gardens were set up in New York City. These gardens were labeled "urban gardens" -(Smith and Kurtz, 2003). Urban gardens and city development coexisted until the early 1990's, when the mayor of New York City attempted to auction off urban gardens as

usable private property. On a legal standpoint, the city had every right to do so, since the urban gardens were owned by the city. However, local community leaders soon got together and attempted to stop the city from auctioning what they deemed as the “community’s plots”. This became a long term struggle between the city and what Smith and Kurtz term as “revanchists”. After a long struggle, the revanchists eventually won a victory, since the city was unable to auction off some of the land. The federal government intervened and stopped the local city government from doing so. The point of a case like this is to illustrate the issue of scale in a green movement (Smith and Kurtz, 2003). Firstly, the openness of knowledge between the community leaders allowed urban farmers to congregate and develop an audible voice against the city. Instead of opting for overarching presences, the urban farmers opted to operate on a local scale, with only one or two urban farms in their jurisdiction. This allowed them to know more about their farms. So on the first point, the farmers managed to accomplish what Earth Day and Live Earth were unable to accomplish. Secondly, farmers appealed to the judicial branch, which has very scalable powers. This was essentially the main offensive factor in the revanchists’ arsenal. Because, they were very knowledgeable about the situation and appealed to higher courts and morals, the revanchists managed to scale their local project to a national one, and some might claim even to a global one, localizing the weight of the nation on a small local government. Such a phenomenon has only been recorded a few times through history, either through the military or through these green movements.

In order to combine all of these concepts together as a method escaping Joseph A. Schumpeter’s creative destruction, the idea of sustainability must be re-invoked. This is perhaps done best through Clark A. Miller’s chart (see Figure 1) that illustrates the five

components of sustainable development: the green domestic product, the local indicator of sustainable development, metro patterns, nongovernmental organizations, and intergovernmental organizations. An example of an intergovernmental organization would be the Environmental Protection Agency (EPA) (Miller, 2005). The Green Domestic Product concerns the integration of environmental ethics into the welfare state (Miller, 2005). The difference between this and the gross domestic product is that the costs of reversing environmental damages are considered. Hence, in the case of China’s rapidly rising economy, the actual green domestic product is far lower than its gross domestic product. The local indicator of sustainable development is that which concerns communities like urban farmer, and is where my own recommendations will fall into. The power of the local ISD had varied through the century, as indicated by the Live Earth concert and the Earth Day movement. In addition to the local community, there must be efforts made on the university’s part to research and develop ideas. This forms the idea of metro patterns. NGO’s and IGO’s are mainly tasked with monitoring and lobbying for political support.

THE MODERN DAY AND FUTURE

There have been many scholarly articles published on the recent green-trend in the world. In the previous section I mentioned several failures of the eco-movement, but those are dated and incomplete attempts. Binghamton will not profit from simply good intention and eco-friendly concerts. It requires something far deeper and applicable.

The establishment of urban farming in China is a good example of recent forays into green architecture (Ren, 2008). The creation of these green buildings was spurred by two phenomena: dissent regarding China’s increasing industrial output, and civilian sentimentalities. The industrial output in the

Beijing region had produced alarming pollution levels. Amidst pressure from several ecologically-minded groups and adherence to the United Nations and the Kyoto Protocol, China welcomed the construction of houses with farms and gardens on their roofs. The plants would alleviate some of the pollution that clouded the Beijing sky. On another note however, the driving force behind civilian acceptance and funding of such buildings is the birth of civilian sentimentalities and the GAIA movement. Such concepts can be easily applied to Binghamton, and have in some form in the surrounding region.

The creation of the hydroponics farm in Ithaca is another example of green-awareness and technology. The farm attempts to reverse the resource exhaustive practices of large-scale farming through regenerative processes. It is powered by both wind and solar power, but most importantly it is cost-effective. Cornell sold its hydroponics facility in 2005 to Challenge Industries, a private firm, where it is still operative to this day (Goldweber, 2005).

In local Binghamton, the efforts of several Binghamton High School students have recreated a micro-version of Cornell's CHF facility. Local students in the IB Biology class, under the guidance of James Stiles, planted various crops under controlled conditions, called earth boxes. They began with ninety earth boxes and now sell in a local farmer's market.

Similarly, another Cornell entity has also proven to be fruitful in Binghamton. The Cornell Cooperative Extension attempts to bridge the gaps between horticulturists and agriculturists. Among the plans that have been developed at the Cornell Cooperative Extension include a plan to establish a permanent structure for organic farmers markets. Binghamton already holds several of these markets in various locations including Downtown Binghamton and Ostiningo Park.

Similarly, the agricultural industry has fared relatively well in Broome County,

Binghamton (see Figure 4). Although the county does not need economic assistance in this sector, it requires a reformed marketing campaign. The staggering difference between cropland and agricultural output is rather alarming (see Figure 2). An effort to equalize this difference will be presented in the recommendations.

RECOMMENDATIONS

With the pressing issues of the future, it is time us, as an informed audience, take steps forward to prevent and solve the lingering green question. Hence, I recommend that the Greater Binghamton region, along with the rest of New York State compete on a national agricultural level. It should be noted that New York State has undergone a good deal of agricultural restructuring since the 1950's (see Fig.5). After a good deal of field work with local authorities and community leaders, I determined that a recommendation for agricultural construction is desperately needed.

To put it simply, the Binghamton community is only a shadow of its former self. Its past as an agricultural giant, as an industrial giant, and as a milling town are distant economic eras. Hence, it is important to realize that the future of the town of Binghamton lies not in the re-establishing of these niches, nor through a restorative effort, but rather through a great leap forwards into the twenty-first century. This great leap will be done through the development of eco-friendly technology.

I have previously discussed individual efforts to ride this ecologically aware trend in America, but I believe much more must be done. Firstly, we must establish that Binghamton will not ride any trend, for too long has this region relied on such trends to survive. Examples include the agricultural industry and the arrival and departure of International Business Machines (IBM). The constructions of trend specific industries rely heavily on the stability of such trends. To better

understand such a phenomenon, one must adhere to a summation equation. I will label this equation, the Migration Equation.

$$\text{Migration Equation: } M + S = 1$$

M: Mobility; S: Stability

The significance of this equation is that it explains the phenomena of the brain drain phenomena in Binghamton in quantifiable terms. When it comes to the aim of the Binghamton community at the time of this article, it is to revitalize the economy. The aim of this project is to fulfill these goals through the integration of college universities and the knowledge economy with local leadership. Hence, the equation applies to the migration of talented individuals. For Binghamton and many other towns, formerly including Boston and Philadelphia, the frequency of mobility of the knowledge class is often greater than that of the frequency of stable talent. Although previous efforts to increase stability in the Greater Binghamton region are admirable and somewhat effective, I propose that we discard notions of promoting stability.

Binghamton has rather ecologically friendly structures, including bale straw homes. However, the marketing appeal of such structures has proven minimal. I propose that Binghamton not only continues its ecological sustainability program, but that it also spearheads the ecological sustainability program on a national scale. It can do this by being one of the first states to adopt a hydroponics greenhouse initiative. Such initiatives have been carried out in the region by neighboring Cornell University and private corporations. On a global scale, such green initiatives have already been adopted by Holland and Sweden. After repeated contact with various agricultural organizations, and visits to the Cornell Cooperative Extension, I determined that there are a few major obstacles that prevent the region from being competitive agriculturally.

First, out sourcing has drastically collapsed local markets. This includes the establishment of large giants such as Wal-Mart and Target on Vestal Parkway. Secondly, Binghamton farmers are generally ill equipped to handle large-scale production. They simply do not produce enough. This is a dilemma that can only be solved over time and several initiatives to protect local goods. They have no need for a large scale production since they do not have a market niche in Binghamton. Thirdly, the farmers simply cannot produce any vegetables or fruits during the winter. The cold Binghamton winters are far more devastating than that experienced in agricultural giants like Florida and California, which does not experience a frost season the likes of Binghamton winters. My recommendation is to alleviate the third dilemma, which in turn will indirectly solve the first and second problems.

The building of a hydroponics greenhouse will enable farmers to be productive during winter months. With a commercial publicly owned greenhouse, farmers will be able to compete against states such as California and Florida. Furthermore, claims of a fickle Binghamton agricultural market will be affected since the greenhouse will establish an un-interruptible grocery production.

The establishment of a greenhouse that relies little on natural landscape will also enable Binghamton to recycle contaminated land, most notably the Brownfield sites. But, it's most important role will be to establish more jobs, noted as "green-collar" jobs. The creation of a green-collar workforce will serve to bridge the gap between the white collar work-force and the blue collar work-force. Simply put, Binghamton will spearhead the integration of management and scholarly individuals with that of the more hands-on worker. This will be done not through the relationship seen now, an advisor advisee relation, but by blurring the lines between a horticulturist and an agriculturist. This will

ensure that the Binghamton's future is not determined by a select few, but rather by the community as a whole.

With all of that in mind, I introduce the concept of the "green-collar citizen". I establish such an individual as the evolution of the ecologically conscious individual. Essentially, this individual will be the citizen who dabbles in urban agriculture. I have previously elaborated on this citizen with an example from New York City. The green-collar citizens will be the individual who is both a farmer and a career professional. The significance of the green-collar citizen is that it will be the driving force of a new economic entity, the Non-Profit-For-Profit-Cooperative (NPFPC). This entity is the evolution of the farming cooperative and is entirely privately funded. Like an ordinary cooperative, it is owned by its workers. Each worker will have a vote and a say. However, unlike the standard cooperative, these NPFPC's will be principally be owned by its investors, essentially placing both control and risk in the hands of its workers. The organization will sell products of its workers for a profit, however these profits will not go to the organization, but rather to the workers. The non-profit part of this entity concerns this capital exchange since the organization displaces profit by increasing the wages of the workers.

The NPFPC will coexist with the large corporations of today. This is due to a new economic concept, I am proposing, and that is market share does not equate to success. In the case of a NPFPC, profit goes to the worker regardless of how much profit is made. Hence,

its success is not measured by how much profit it makes, but how much its workers profit. Since, the workers are investors by nature; the wage of the worker sets the definition of success. A good comparison would be to compare a corporation which pays its workers low wages, and an NPFPC. Although the corporation may encompass a larger market, its profits do not go to the workers, leaving workers with little incentive to improve production. The lack of a direct link between productivity and wages is the Achilles heel of this model. However, since an NPFPC has a direct link between the worker and the profit, productivity will increase due to personal capitalistic venture. Furthermore, to combat the worker who wishes to profit but not to work, a system of membership and election will be utilized. Essentially, the NPFPC breaks the boundaries between a union and a company, and combines them into a far more efficient entity. The green-collar citizens, since they encompass each aspect of the MAC Educational System (see Figure 3), are the driving force of this system.

All of these recommendations benefit the Binghamton economy by re-establishing its essential goods market. We must realize that we have to market to our neighbors as well as to the wallets of aliens. By establishing urban farming in the form of a large collective greenhouse, and in small plots of unused land, the Binghamton region can recover on two fronts. It will be able to revitalize on both an internal and external perspective.

APPENDIX

Table 2. Civic Epistemologies of Indicators of Sustainable Development

	Green GDP	Local ISD	Metropatterns	NGOs	IGOs
Spatial frame	Nation	Community	Metro region	Globe	Globe
Form of knowledge	National accounting systems	Indicators of community well-being	Regional GIS maps	Indicators of planetary health	Reports of measures and statistical inventories
Institutional organization	Expert bureaus	Citizen activists and local planners	University research centers and private think tanks	NGO scientists	State-produced statistics; expert and diplomatic networks
Policy relevance	Administrative decisions, market signals, public understanding of economy	Local land use planning	Metropolitan politics and planning	Lobbying, public education, conservation partnerships	Monitoring and verification
Regime of trust	Expert judgment and statistical routine	Community participation	University prestige; political experience; charisma	Demonstrated commitment to issue specific values	Standardization of protocols
Definition of sustainability	Conservation of natural capital	Community well-being	Urban renewal and smart growth	Planetary health	Global pollution reduction

NOTE: GDP = gross domestic product; ISD = indicator of sustainable development; NGO = nongovernmental organization; IGO = intergovernmental organization.

Fig. 1 Source adapted from “New Civic Epistemologies of Quantification: Making Sense of Indicators of Local and Global Sustainability”. *Science, Technology, & Human Values*, Vol. 30, No. 3 (Summer, 2005), pp. 403-432

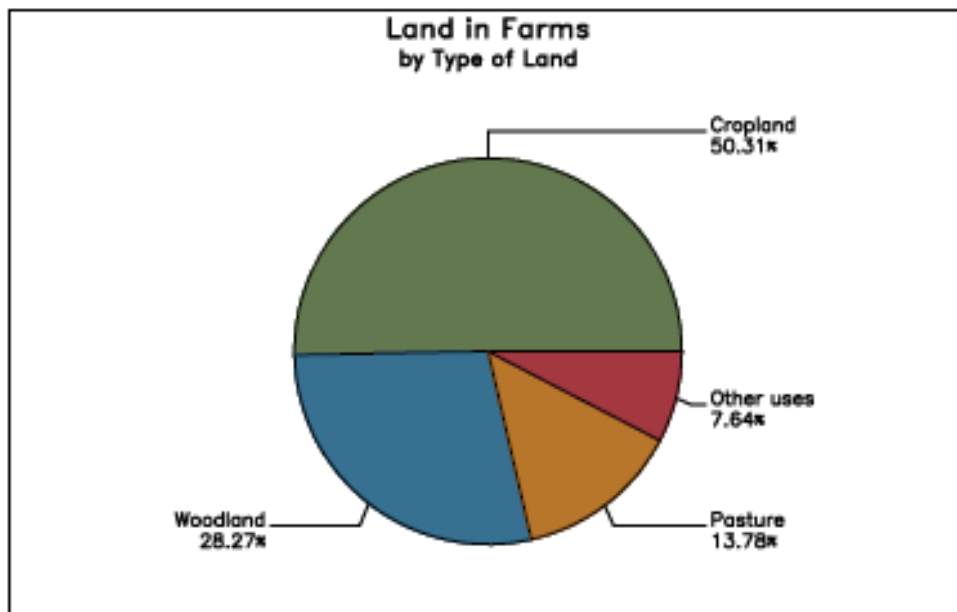


Fig. 2 Source adapted from “2007 Census of Agriculture”. United States Department of Agriculture

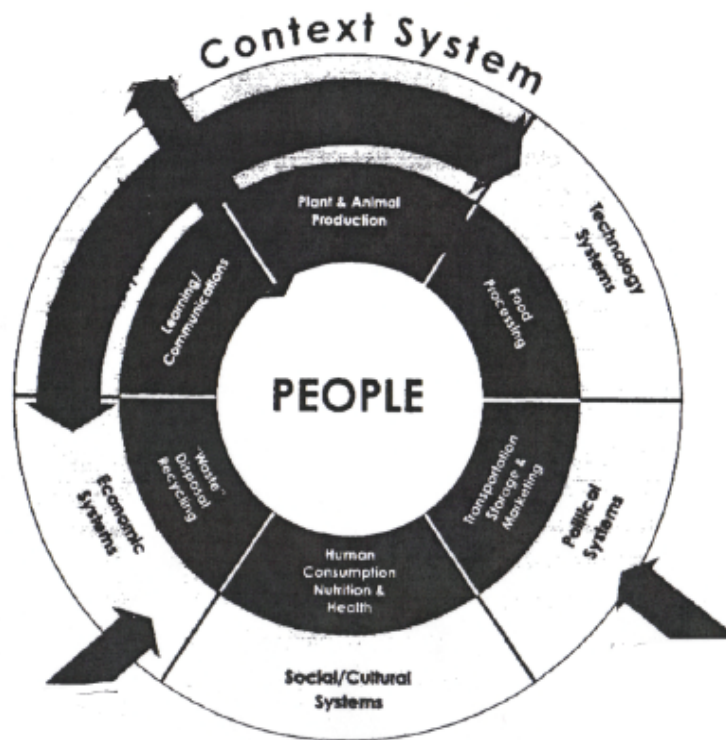


Fig. 3 Courtesy of Benjamin Wood

	2007	2002	% change
Number of Farms	580	588	- 1
Land in Farms	86,613 acres	98,276 acres	- 12
Average Size of Farm	149 acres	167 acres	- 11
Market Value of Production	\$29,885,000	\$28,792,000	+ 4
Crop Sales \$5,547,000 (19 percent)			
Livestock Sales \$24,337,000 (81 percent)			
Average Per Farm	\$51,526	\$48,966	+ 5
Government Payments	\$754,000	\$1,051,000	- 28
Average Per Farm	\$6,035	\$10,512	- 43

Fig. 4 Source adapted from “2007 Census of Agriculture”. United States Department of Agriculture

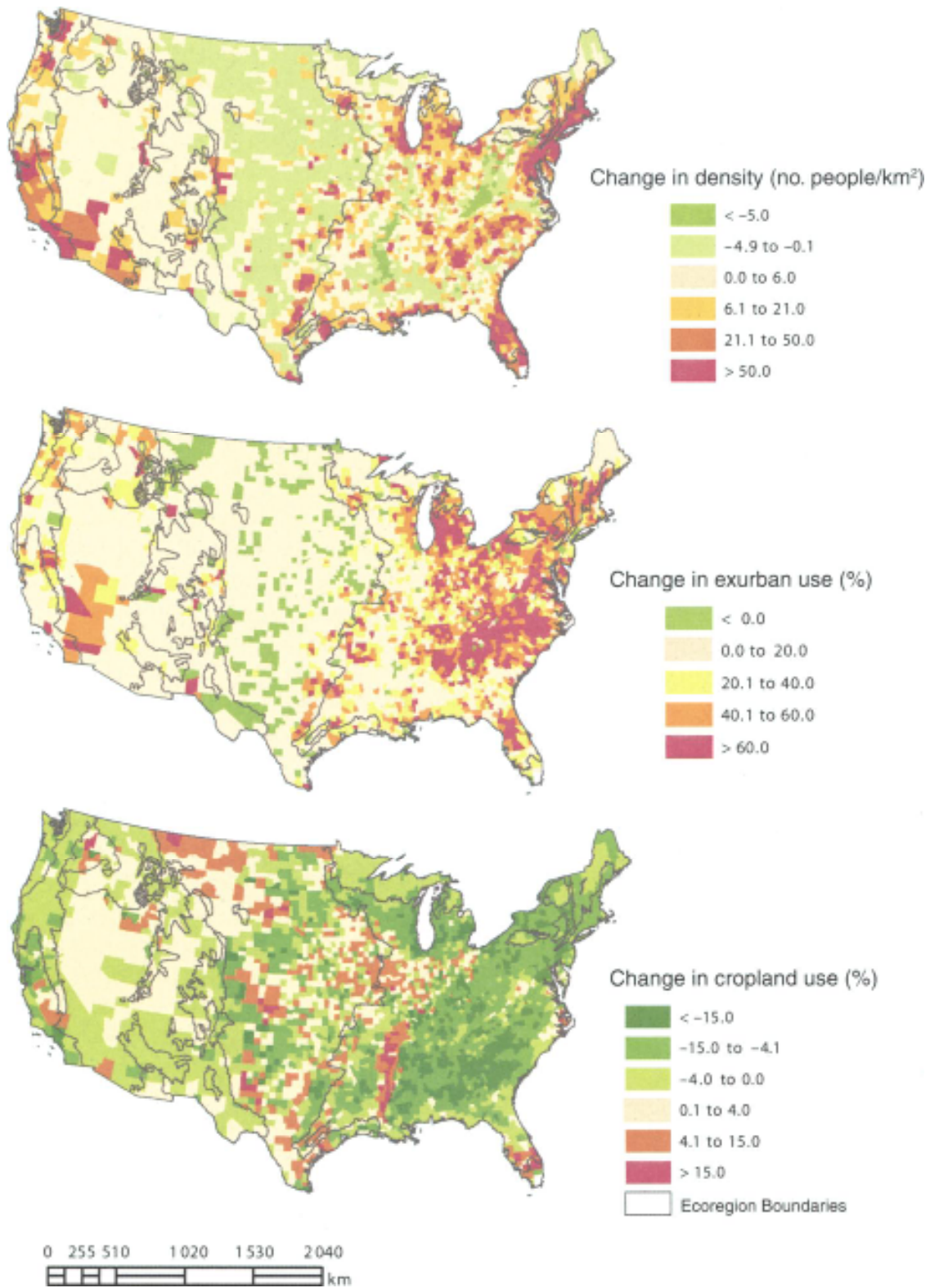


Fig. 5 Source adapted from "Rural Land-Use Trends in the Conterminous United States, 1950-2000". Ecological Applications, Vol. 15, No. 6 (Dec., 2005), pp. 1851-1863

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