

Restoration - Credits and Acres

Total credits from year 2002 to 2008 as proposed by WilsonMiller (W/M now Stantec) to the County in a 197 page report grew from 134,000 credits in 2002 to 315,000 recommended in 2008 to 427,000 including agriculture and panther corridor credits. These numbers were largely accepted by the County at the time. Restoration credits were at 160,000. Early entry bonus credits were 27,000. The W/M totals beyond the 315,000 credits proposed adding credits to a total of 427,000 including 89,000 credits for agriculture and 23,000 for panther corridors. Base credits in the recommendations of 128,000 were derived from partial easements for eliminating a number of layers of environmental benefit out of 7 possible layers. Currently approved easements as of March 2019 for SSA's 1-17 are 70,210 base credits. See chart below for numeric compilations for the W/M numbers and current SSA's 1-17 credit elements.

From the initial 2002 and 2008 recommendations to the present (March 2019) the number of SSA's grew from 13 to 17 with SSA's 14 to 16 approved and SSA 17 still pending. Total restoration credits are currently at 255,109 including Ave Maria. Further growth in SSA derived credits will likely continue.

Restoration credits are currently (March 2019) 123,977 are comprised of R-1 "designation" credits approved for SSA's 1-13 38,481 and not yet approved of 20,392 for SSA's 14-17 totaling 58,874. R-1 credits do not require any action except designation. R-2 restoration comprises 64,675 credits for SSA's 1-17. Total restoration credits (R-1 + R-2) represent approximately 50% of total credits.

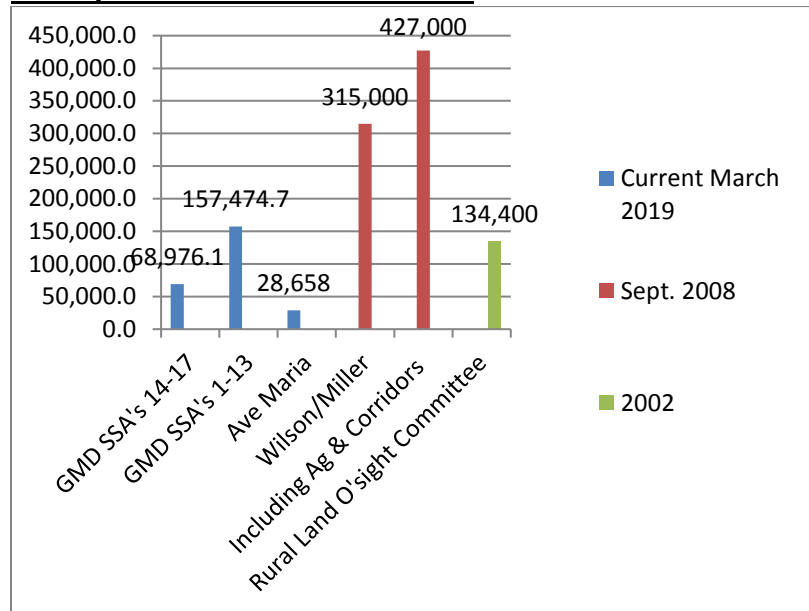
With regard to restoration **acres**, W/M in 2008 indicated a total of 80,000 potential acres for future restoration. Subsequent to the 2008 recommendations a compilation by Growth Mgt. Div. (year 2011) for R-1 acres of 24,509 and R-2 acres of 23,858 totaling 48,367 acres. See chart below.

Of all the credits discussed R-1 designation had no specified restoration or other purpose defined. Thus no reason for accomplishing anything tangible. Presumably they were established for restoration as the name implies. It is not clear when or by whom nor for what exact purpose were they established. Regardless of derivation there are no time commitments or criteria for accomplishing a goal. To date, after 13 years only 428 acres have been restored (in SSA 6). More on this follows below with proposed policies for restoration planning and execution.

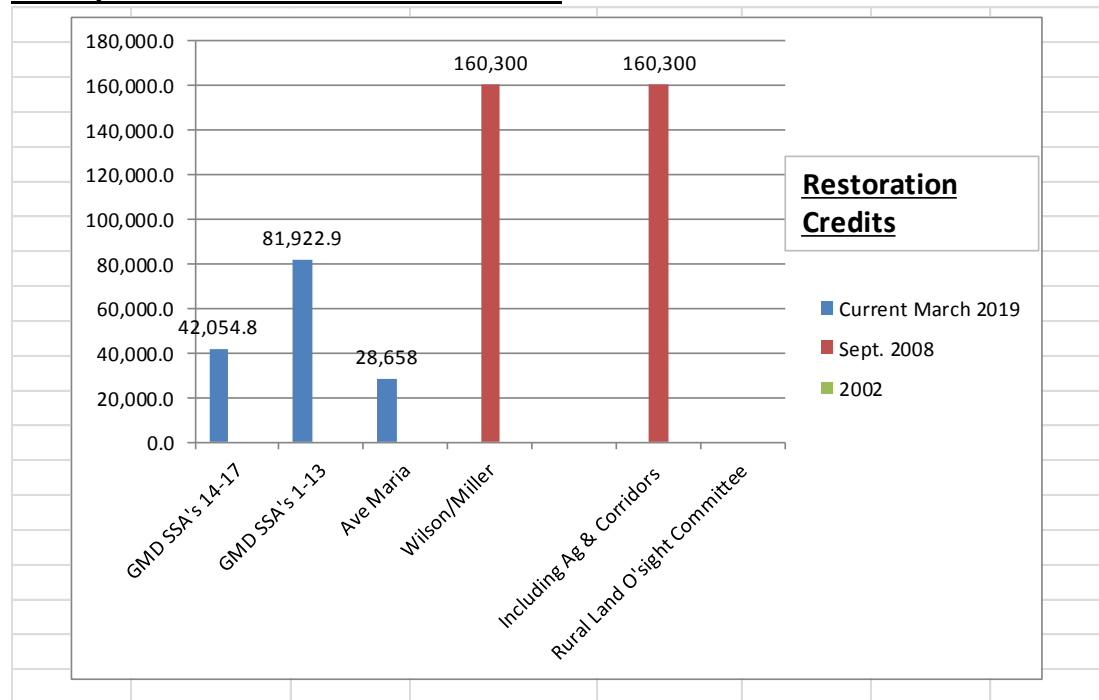
In the context of the massive growth of both total and especially restoration credits and the lack of specified goals for achieving implementation, one policy that is urged immediately is to **Eliminate R-1** credits. Unlike other restoration credits it appears to have no real function.

R-2 credits are defined as "potential" credits for effecting actual restoration. Their implementation however is needs clear definition of specific natural habitats with actionable qualitative and numeric objectives. There needs defined timing to meet ecological functions consisting of starting point, intermediate results, and completions. There is required oversight by 3rd parties other than control by landowners. There is also requirement for stable long term funding sources for both restoration and maintenance. See attached for suggested policy requirements to effect realistic R-2 results.

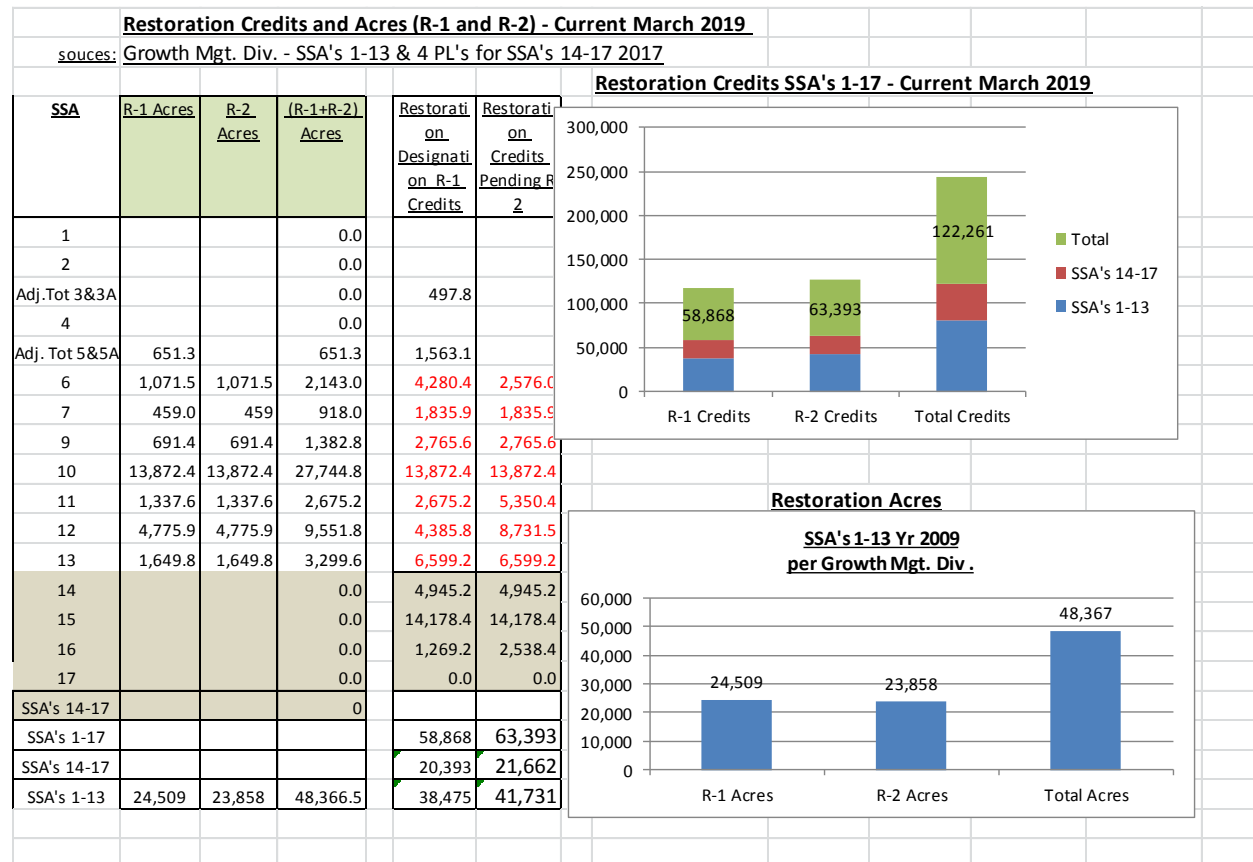
History of Total Credits to Buildout



History of Restoration Credits to Buildout



Restoration Credits & Acres by SSA



RLSA Restoration Credits, Acres and Suggested Policies, by Michael Seef, 4/9/2019

RLSA - Total and Restoration Credits									
Current 3/1/2019									
Source: Growth Mgt. Div. - SSA's 14-17 from 4 PL's - 10/6/2017									
		Base Credits						Total Restoration	Total Credits
		Earned - Easements (Removing Layers)	Approved Early Entry Credits Earned	Additional Base - Not Currently Approved	R-1 Restora. Designated - Pending Approval	R-2 Potent'l. Restora. - Pending Appvl	Restora. credits completed	Credits (R-1 +R-2) Pending for Approval	Including Unapprvd Restora. & Amended Base
	Total SSA's 14-17	9,906.7	4,356.7	12,657.9	20,392.8	21,662.0	0.0	42,054.8	68,976.1
Source: Growth Mgt. Div. SSA's 1-13 Updated 12/8/2011									
	Total SSA's 1-13	60,303.5	15,195.6	52.7	38,481.4	43,013.5	428.0	81,922.9	157,474.7
	Total SSA's 14-17	9,906.7	4,356.7	12,657.9	20,392.8	21,662.0	0.0	42,054.8	68,976.1
	Total SSA's 1-17	70,210.2	19,552.3	12,710.6	58,874.2	64,675.5	428.0	123,977.7	226,450.8
Restoration credits % of total credits=								49%	
								Ave Maria	28,658
								Total Current Credits	255,109
								Development Acres @ 8 creds. /acre	
								28,306 Acres of Compact Development	
								Plus 10% - 30% for infrastructure	
Sept. 2008									
Source: WilsonMiller- Proposed RLSA Modifications - Report to Wm. Greenwood									
pg. 192	SSA's 1-13 Aappvd. & Pending	82,000	credits	Panther Habitat 6k, +Caracara 11k, +Exotic Control 16.5k, +Flow Way 16.5k,					
	Future restoration	78,000		+ Floway 16.5k + Native Habitat Restora. 22k					
	Total Restoration	160,000	credits						
SSa's 1-13 approx. 29% of 40,000 acres proposed restoration of Camp Keais & OK Slough = 11,600 restoration acres.									
				Credits					
pg. 192	Approved Restoration Credits - (SSA's 1-9, 11)			28,000					
	Pending Restoration Credits - (SSA's 10,12,13)			54,000					
pg. 192	Estimated Future Restoration Credits			72,000	Incl. Camp Keais & OK Slough				
	Potential Restoration Credits for Current System			160,000					
	Potential Credits						Potential Restoration Acres	Acres	
pg. 192	Base Credits			128,000			Planned Restoration SSA' 1-13	12,000	
	Restoration Credits			160,000			Future Credits @ 4 credits/acre	40,000	
	Early Entry Bonus			27,000			Potential Acres To Be Restored	52,000	
Total Proposed Credits				315,000					
pg. 193	Agriculture Credits			89,000		Agriculture Credits		Credits	
						Open Designated - Not Already in SSA's		39,000	
pg. 193	Panther Corridor Credits			23,000		Privately Owned Open Designated - Outside ACSC		50,000	
Total Credits				427,000	89,000				
Year 2002									
Page 40 "Report and Recommendations of the Collier County Rural Lands Assessment Area Oversight Committee for the Immokalee Area Study"									
Prepared by WilsonMiller, May 2002									
County staff believed this program had a maximum amount of potential development limited to approx. 16,800 acres of SRAs									
				Based on 8 Credits/acre =	134,400	Credits			

The following narrative and policy recommendations suggest needed input to clearly plan and define restoration results based on requirements for each desired habitat and unit demarcated. It discusses credit distribution and release within designated units of restoration. It includes 8 key elements which should, after staff review and BCC review be eventually incorporated in the LDC.

Following this there is a detailed critique of SSA 15's current restoration plan based on input from a highly experienced ecologist as an example of problems which could arise with the present system.

Guide for Policy Recommendations
Restoration Planning and Execution

Plan requirements

- 1) While it is understood that credit has already been provided to the landowner for restrictive easement on the property, prior to approving any additional credit releases. A fully restrictive perpetual easement should be required. Restoration areas are placed under perpetual conservation easement specifically for the purpose of habitat/restoration as identified in County approved restoration plans and clearly prohibiting activities contrary to that purpose such as fill, excavation, cutting/harvest of native trees, use of lands for certain types of agriculture, road/structure building (unless identified in the approved restoration plan), and exploration/extraction of oil/minerals.
- 2) The current restoration plan is extremely vague in both details of target restoration by each restoration unit of activity (farm field size, road length, floway measures) and associated measurable success goals: This should be deemed unacceptable as it will make it impossible to agree upon if restorations activities are done correctly and whether they are trending in a positive direction. It is suggested that each separate restoration unit be defined by owner in the restoration plan. Then for each unit's acreage the owner provides pre and post determinations by specific habitat type with supporting information describing pre and anticipated post conditions.
- 3) The restoration plan (SSA 15) provides for two years of natural recruitment prior to potential planting. This seems problematic especially within a large field that has been actively farmed for many years and thus has no appropriate native seed bank to establish an appropriate natural vegetative community. This is likely to result in extended time to meet basic success goals and will likely result in greater coverage of exotic and nuisance species in the initial years after restoration, thus increasing restoration cost and risk.
- 4) The plan only identifies that the owner will control Category I and Category II exotic species, but nuisance species such as cattail, dog fennel, and pasture grasses might be allowed to flourish and be inadvertently be counted towards successful vegetation establishment.
- 5) The restoration plan should provide clearly defined success criteria goals by habitat including desired dominate native species and minimum appropriate vegetative cover by habitat (deep marsh, marsh, wet prairie, hydric pine flatwoods, hardwood wetlands, cypress, pine uplands, palmetto uplands, etc). For each of these systems targeted habitats hydroperiods (time period of saturation/inundation, average season high water depth, maximum seasonal high water) needs to be defined to allow post assessment and management adjustments. For forested and upland systems in addition to identifying appropriate native tree composition (species and dominance) minimum trees per acre and minimum tree height/canopy closure will define level of success.

- 6) The agreement must clearly indicate who is responsible for conducting/funding restoration activities and monitoring, including anticipated cost and schedule for restoration activities. Additionally, prior to credit release, financial assurance through an instrument such as a bond should be established. This will provide reasonable assurance that the work will be successfully carried out. The required financial instrument could then be reduced periodically as clearly defined restoration goals/success targets are met
- 7) Agreed upon approved credits should be released incrementally based on attainment of reasonable levels of success of the restoration activities. Sufficient credits should be withheld until intermediate and final success criteria are met. A long-term maintenance fund as suggested below should be established so that there is incentive for the owners to successfully complete the restoration.
- 8) The plan should clearly identify a long-term term management entity who will maintain restored lands after attaining restoration success and release of credits. Insuring funding for long-term management is essential. A suggested approach would be for each credit received, the owner would set aside monies into a long-term management endowment fund. Such a fund would be solely used for long term management of the property. This applies only after all phases meet substantial success. Funding should be sufficient so that at the time of final success a conservative projected interest rate will support the fund's maintenance.

Critique of Restoration plan for SSA15 Including Distribution of Credit Allotments

- 10,426 credits (73.5%) allocated for flow-way restoration (removal of roads)
- 3,658 credits (25.6%) allocated for farm field restoration (grading/natural habitat establishment)
- 94.4 credits (0.9%) allocated for the Habitat Enhancement areas (Exotic Control)

Problem 1: It appears that an error was made on assignment of credits for flow-way work and farm field work. The amount of restoration work/expense for the restoration of farm fields and the potential regional wetland/flow-way/wildlife benefits for the farm field restoration is an order of magnitude greater than the cost/benefits associated with the road removal (flow-way restoration). The credits allotted should more justifiably be assigned with the 70% percent to the farm fields and $\pm 25\%$ for the road removal.

Problem 2: Within the discussion on credit distribution the roads are separate from the farm field restoration. However, in the description of activities it is clear that the restoration of the flow way pinch point requires that the farm road and farm fields 8, 9 & 10 be regraded to alleviate pinch point. So, in order to obtain any credits for the flow way restoration, at least these farm fields must be successfully regraded.

Problem 3: There are no success criteria in the plan, only restoration goals: There needs to be clearly defined and measurable expectations on what defines successful fulfillment of the restoration goals (criteria) which are reasonable and progressive in nature.

The plan states number of credits for each activity and that success will be met but it is not clear on when credits are available. As all activities and achievement of full success attainment are likely to take multiple years, it is recommended that the credits are released progressively after achieving/measurable project thresholds – with enough credits withheld until final success to maintain incentive to successfully complete project: An example of such a graduated release of credit would be as follows:

1. Flow-way restoration
 - a. Place restoration area under perpetual conservation easement – 15% credit release
 - b. Completion of grading/as build surveys - 20% credit release
 - c. Attainment of minimum 20% appropriate native vegetation < 10% exotic/nuisance vegetations – 20% credit release
 - d. Attainment of 80% cover appropriate native vegetation and <5% exotic/nuisance vegetation after 1 year w/out maintenance – 25% credit release
 - e. Transfer to maintenance entity/long term funding - 20% release
2. Farm field restoration
 - a. Place restoration area under perpetual conservation easement – 15% credit release
 - b. Completion of grading/disking/herbicide - provide build surveys - 20% credit release
 - c. Attainment of minimum 20% appropriate native vegetation < 10% exotic/nuisance vegetations – 20% credit release
 - d. Attainment of 80% cover appropriate native vegetation and <5% exotic/nuisance vegetation after one-year w/out maintenance – 25% credit release
 - e. Transfer to maintenance entity/long term funding - 20% credit release
3. Habitat Enhancement (Exotic Vegetation Removal)
 - a. Place restoration area under perpetual conservation easement – 15% release
 - b. Completion of initial exotic control - 20% release
 - c. Following one year of maintenance treatments (two maintenance treatments) and annual report: – 20% credit
 - d. Attainment of 80% cover appropriate native vegetation and <5% exotic/nuisance vegetation – 25% credit release
 - e. Transfer to maintenance entity/long term funding - 20% release

Timing of the Restoration Work: The current plan has table(3) listing different activities but does not provide any relative information on anticipated dates, or anticipated time frame start to finish for any of the projects. Are they all going to be start in the first year? Or are individual phases anticipated to begin over a period of 5 or 10 years? How long are individual work phases anticipated to take to reach different phases of success Time-Zero, confirmation of native vegetation establishment/exotic control, and attainment of appropriate native vegetation cover and less than 5% exotic vegetation cover?

The plan is very vague on actual success goals and specific anticipated restoration plans for habitat establishment (ie vegetation/hydrology by designed habitat type) - this should be more specific in order to assess achievement of habitat goals. Also, conversion of large areas which have previously been converted and heavily managed for agriculture use to native habitats through a dependence on native seed bank recruitment is very risky (estimate <10% chance of success within in 5 years) – fatal flaw in the plans and anticipated to significantly increase time of success obtainment and cost to reach final goals.