

Return of Organization Exempt From Income Tax

Under section 501(c), 527, or 4947(a)(1) of the Internal Revenue Code (except private foundations)

2017

- ▶ Do not enter social security numbers on this form as it may be made public.
- ▶ Go to www.irs.gov/Form990 for instructions and the latest information.

Open to Public Inspection

Department of the Treasury
Internal Revenue Service

A For the **2017** calendar year, or tax year beginning **2017**, and ending **20**

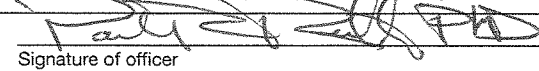
B Check if applicable: <input type="checkbox"/> Address change <input type="checkbox"/> Name change <input type="checkbox"/> Initial return <input type="checkbox"/> Final return/terminated <input type="checkbox"/> Amended return <input type="checkbox"/> Application pending	C Name of organization <u>Rare Species Conservatory Foundation</u>		D Employer identification number 65-0560456
	Doing business as		E Telephone number (561) 790-5864
	Number and street (or P.O. box if mail is not delivered to street address)	Room/suite	
	1222 E Road City or town, state or province, country, and ZIP or foreign postal code Loxahatchee, FL 33470		
F Name and address of principal officer: Paul R Reillo, 1222 E Road, Loxahatchee, FL 33470			G Gross receipts \$ 779,427.
I Tax-exempt status: <input checked="" type="checkbox"/> 501(c)(3) <input type="checkbox"/> 501(c) () ◀ (insert no.) <input type="checkbox"/> 4947(a)(1) or <input type="checkbox"/> 527			H(a) Is this a group return for subordinates? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No H(b) Are all subordinates included? <input type="checkbox"/> Yes <input type="checkbox"/> No If "No," attach a list. (see instructions)
J Website: ▶ <u>Rarespecies.org</u>			H(c) Group exemption number ▶
K Form of organization: <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Trust <input type="checkbox"/> Association <input type="checkbox"/> Other ▶			L Year of formation: 1994 M State of legal domicile: FL

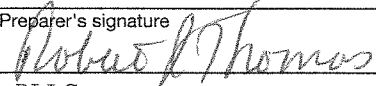
Part I Summary

Activities & Governance	1	Briefly describe the organization's mission or most significant activities: <u>International wildlife conservation Biodiversity and habitat protection; endangered and threatened species propagation, management and recovery programs.</u>		
	2	Check this box <input type="checkbox"/> if the organization discontinued its operations or disposed of more than 25% of its net assets.		
	3	Number of voting members of the governing body (Part VI, line 1a)	3	4
	4	Number of independent voting members of the governing body (Part VI, line 1b)	4	4
	5	Total number of individuals employed in calendar year 2017 (Part V, line 2a)	5	
	6	Total number of volunteers (estimate if necessary)	6	0
	7a	Total unrelated business revenue from Part VIII, column (C), line 12	7a	0.
b	Net unrelated business taxable income from Form 990-T, line 34	7b	0.	
Revenue	8	Contributions and grants (Part VIII, line 1h)	Prior Year	Current Year
	9	Program service revenue (Part VIII, line 2g)	903,599.	758,603.
	10	Investment income (Part VIII, column (A), lines 3, 4, and 7d)	4,561.	4,993.
	11	Other revenue (Part VIII, column (A), lines 5, 6d, 8c, 9c, 10c, and 11e)		15,831.
	12	Total revenue—add lines 8 through 11 (must equal Part VIII, column (A), line 12)	908,160.	779,427.
Expenses	13	Grants and similar amounts paid (Part IX, column (A), lines 1–3)	344,920.	183,080.
	14	Benefits paid to or for members (Part IX, column (A), line 4)		
	15	Salaries, other compensation, employee benefits (Part IX, column (A), lines 5–10)	142,451.	196,731.
	16a	Professional fundraising fees (Part IX, column (A), line 11e)		
	b	Total fundraising expenses (Part IX, column (D), line 25) ▶ 3,015.		
	17	Other expenses (Part IX, column (A), lines 11a–11d, 11f–24e)	196,707.	231,968.
	18	Total expenses. Add lines 13–17 (must equal Part IX, column (A), line 25)	684,078.	611,779.
19	Revenue less expenses. Subtract line 18 from line 12	224,082.	167,648.	
Net Assets or Fund Balances	20	Total assets (Part X, line 16)	Beginning of Current Year	End of Year
	21	Total liabilities (Part X, line 26)	2,127,503.	2,306,922.
	22	Net assets or fund balances. Subtract line 21 from line 20	3,995.	5,171.
			2,123,508.	2,301,751.

Part II Signature Block

Under penalties of perjury, I declare that I have examined this return, including accompanying schedules and statements, and to the best of my knowledge and belief, it is true, correct, and complete. Declaration of preparer (other than officer) is based on all information of which preparer has any knowledge.

Sign Here		<u>11 May 2018</u>
	Signature of officer	Date
	Paul Reillo, President	
	Type or print name and title	

Paid Preparer Use Only	Print/Type preparer's name	Preparer's signature	Date	Check <input type="checkbox"/> if self-employed	PTIN
	Robert J Thomas		5/10/18		
	Firm's name ▶ Mark Brechbill, PLLC	Firm's EIN ▶ 46-0734020		Phone no. (772) 220-3380	
	Firm's address ▶ 215 S Federal Hwy, Suite 200, Stuart, FL 34994				

May the IRS discuss this return with the preparer shown above? (see instructions) Yes No

Part III Statement of Program Service Accomplishments

Check if Schedule O contains a response or note to any line in this Part III

1 Briefly describe the organization's mission:
International wildlife conservation, Biodiversity and habitat
protection; endangered and threatened species propagation, management
and recovery programs; capacity building and outreach

2 Did the organization undertake any significant program services during the year which were not listed on the prior Form 990 or 990-EZ? Yes No
If "Yes," describe these new services on Schedule O.

3 Did the organization cease conducting, or make significant changes in how it conducts, any program services? Yes No
If "Yes," describe these changes on Schedule O.

4 Describe the organization's program service accomplishments for each of its three largest program services, as measured by expenses. Section 501(c)(3) and 501(c)(4) organizations are required to report the amount of grants and allocations to others, the total expenses, and revenue, if any, for each program service reported.

4a (Code:) (Expenses \$ 414,970. including grants of \$ 0.) (Revenue \$ 0.)
Endangered species propagation and management programs - Rare
Species Conservatory in Loxahatchee, FL
See Statement of Program Service Accomplishments attached

4b (Code:) (Expenses \$ 191,580. including grants of \$ 0.) (Revenue \$ 0.)
International (in Situ) wildlife/biodiversity conservation
Programs
See Statement of Program Service Accomplishments attached

4c (Code:) (Expenses \$ including grants of \$) (Revenue \$)

4d Other program services (Describe in Schedule O.)
(Expenses \$ including grants of \$) (Revenue \$)

4e Total program service expenses ▶ 606,550.

Part IV Checklist of Required Schedules

		Yes	No
1	Is the organization described in section 501(c)(3) or 4947(a)(1) (other than a private foundation)? <i>If "Yes," complete Schedule A</i>	X	
2	Is the organization required to complete <i>Schedule B, Schedule of Contributors</i> (see instructions)?	X	
3	Did the organization engage in direct or indirect political campaign activities on behalf of or in opposition to candidates for public office? <i>If "Yes," complete Schedule C, Part I</i>		X
4	Section 501(c)(3) organizations. Did the organization engage in lobbying activities, or have a section 501(h) election in effect during the tax year? <i>If "Yes," complete Schedule C, Part II</i>		X
5	Is the organization a section 501(c)(4), 501(c)(5), or 501(c)(6) organization that receives membership dues, assessments, or similar amounts as defined in Revenue Procedure 98-19? <i>If "Yes," complete Schedule C, Part III</i>		X
6	Did the organization maintain any donor advised funds or any similar funds or accounts for which donors have the right to provide advice on the distribution or investment of amounts in such funds or accounts? <i>If "Yes," complete Schedule D, Part I</i>		X
7	Did the organization receive or hold a conservation easement, including easements to preserve open space, the environment, historic land areas, or historic structures? <i>If "Yes," complete Schedule D, Part II</i>		X
8	Did the organization maintain collections of works of art, historical treasures, or other similar assets? <i>If "Yes," complete Schedule D, Part III</i>		X
9	Did the organization report an amount in Part X, line 21, for escrow or custodial account liability, serve as a custodian for amounts not listed in Part X; or provide credit counseling, debt management, credit repair, or debt negotiation services? <i>If "Yes," complete Schedule D, Part IV</i>		X
10	Did the organization, directly or through a related organization, hold assets in temporarily restricted endowments, permanent endowments, or quasi-endowments? <i>If "Yes," complete Schedule D, Part V</i>		X
11	If the organization's answer to any of the following questions is "Yes," then complete Schedule D, Parts VI, VII, VIII, IX, or X as applicable.		
a	Did the organization report an amount for land, buildings, and equipment in Part X, line 10? <i>If "Yes," complete Schedule D, Part VI</i>	X	
b	Did the organization report an amount for investments—other securities in Part X, line 12 that is 5% or more of its total assets reported in Part X, line 16? <i>If "Yes," complete Schedule D, Part VII</i>		X
c	Did the organization report an amount for investments—program related in Part X, line 13 that is 5% or more of its total assets reported in Part X, line 16? <i>If "Yes," complete Schedule D, Part VIII</i>	X	
d	Did the organization report an amount for other assets in Part X, line 15 that is 5% or more of its total assets reported in Part X, line 16? <i>If "Yes," complete Schedule D, Part IX</i>		X
e	Did the organization report an amount for other liabilities in Part X, line 25? <i>If "Yes," complete Schedule D, Part X</i>	X	
f	Did the organization's separate or consolidated financial statements for the tax year include a footnote that addresses the organization's liability for uncertain tax positions under FIN 48 (ASC 740)? <i>If "Yes," complete Schedule D, Part X</i>		X
12a	Did the organization obtain separate, independent audited financial statements for the tax year? <i>If "Yes," complete Schedule D, Parts XI and XII</i>		X
b	Was the organization included in consolidated, independent audited financial statements for the tax year? <i>If "Yes," and if the organization answered "No" to line 12a, then completing Schedule D, Parts XI and XII is optional</i>		X
13	Is the organization a school described in section 170(b)(1)(A)(ii)? <i>If "Yes," complete Schedule E</i>		X
14a	Did the organization maintain an office, employees, or agents outside of the United States?		X
b	Did the organization have aggregate revenues or expenses of more than \$10,000 from grantmaking, fundraising, business, investment, and program service activities outside the United States, or aggregate foreign investments valued at \$100,000 or more? <i>If "Yes," complete Schedule F, Parts I and IV.</i>	X	
15	Did the organization report on Part IX, column (A), line 3, more than \$5,000 of grants or other assistance to or for any foreign organization? <i>If "Yes," complete Schedule F, Parts II and IV</i>	X	
16	Did the organization report on Part IX, column (A), line 3, more than \$5,000 of aggregate grants or other assistance to or for foreign individuals? <i>If "Yes," complete Schedule F, Parts III and IV.</i>		X
17	Did the organization report a total of more than \$15,000 of expenses for professional fundraising services on Part IX, column (A), lines 6 and 11e? <i>If "Yes," complete Schedule G, Part I (see instructions)</i>		X
18	Did the organization report more than \$15,000 total of fundraising event gross income and contributions on Part VIII, lines 1c and 8a? <i>If "Yes," complete Schedule G, Part II</i>		X
19	Did the organization report more than \$15,000 of gross income from gaming activities on Part VIII, line 9a? <i>If "Yes," complete Schedule G, Part III</i>		X

Part IV Checklist of Required Schedules *(continued)*

		Yes	No
20 a	Did the organization operate one or more hospital facilities? <i>If "Yes," complete Schedule H</i>		X
b	If "Yes" to line 20a, did the organization attach a copy of its audited financial statements to this return?		
21	Did the organization report more than \$5,000 of grants or other assistance to any domestic organization or domestic government on Part IX, column (A), line 1? <i>If "Yes," complete Schedule I, Parts I and II</i>		X
22	Did the organization report more than \$5,000 of grants or other assistance to or for domestic individuals on Part IX, column (A), line 2? <i>If "Yes," complete Schedule I, Parts I and III</i>		X
23	Did the organization answer "Yes" to Part VII, Section A, line 3, 4, or 5 about compensation of the organization's current and former officers, directors, trustees, key employees, and highest compensated employees? <i>If "Yes," complete Schedule J</i>		X
24a	Did the organization have a tax-exempt bond issue with an outstanding principal amount of more than \$100,000 as of the last day of the year, that was issued after December 31, 2002? <i>If "Yes," answer lines 24b through 24d and complete Schedule K. If "No," go to line 25a</i>		X
b	Did the organization invest any proceeds of tax-exempt bonds beyond a temporary period exception?		
c	Did the organization maintain an escrow account other than a refunding escrow at any time during the year to defease any tax-exempt bonds?		
d	Did the organization act as an "on behalf of" issuer for bonds outstanding at any time during the year?		
25a	Section 501(c)(3), 501(c)(4), and 501(c)(29) organizations. Did the organization engage in an excess benefit transaction with a disqualified person during the year? <i>If "Yes," complete Schedule L, Part I</i>		X
b	Is the organization aware that it engaged in an excess benefit transaction with a disqualified person in a prior year, and that the transaction has not been reported on any of the organization's prior Forms 990 or 990-EZ? <i>If "Yes," complete Schedule L, Part I</i>		X
26	Did the organization report any amount on Part X, line 5, 6, or 22 for receivables from or payables to any current or former officers, directors, trustees, key employees, highest compensated employees, or disqualified persons? <i>If "Yes," complete Schedule L, Part II</i>		X
27	Did the organization provide a grant or other assistance to an officer, director, trustee, key employee, substantial contributor or employee thereof, a grant selection committee member, or to a 35% controlled entity or family member of any of these persons? <i>If "Yes," complete Schedule L, Part III</i>		X
28	Was the organization a party to a business transaction with one of the following parties (see Schedule L, Part IV instructions for applicable filing thresholds, conditions, and exceptions):		
a	A current or former officer, director, trustee, or key employee? <i>If "Yes," complete Schedule L, Part IV</i>		X
b	A family member of a current or former officer, director, trustee, or key employee? <i>If "Yes," complete Schedule L, Part IV</i>		X
c	An entity of which a current or former officer, director, trustee, or key employee (or a family member thereof) was an officer, director, trustee, or direct or indirect owner? <i>If "Yes," complete Schedule L, Part IV</i>		X
29	Did the organization receive more than \$25,000 in non-cash contributions? <i>If "Yes," complete Schedule M</i>		X
30	Did the organization receive contributions of art, historical treasures, or other similar assets, or qualified conservation contributions? <i>If "Yes," complete Schedule M</i>		X
31	Did the organization liquidate, terminate, or dissolve and cease operations? <i>If "Yes," complete Schedule N, Part I</i>		X
32	Did the organization sell, exchange, dispose of, or transfer more than 25% of its net assets? <i>If "Yes," complete Schedule N, Part II</i>		X
33	Did the organization own 100% of an entity disregarded as separate from the organization under Regulations sections 301.7701-2 and 301.7701-3? <i>If "Yes," complete Schedule R, Part I</i>		X
34	Was the organization related to any tax-exempt or taxable entity? <i>If "Yes," complete Schedule R, Part II, III, or IV, and Part V, line 1</i>		X
35a	Did the organization have a controlled entity within the meaning of section 512(b)(13)?		X
b	If "Yes" to line 35a, did the organization receive any payment from or engage in any transaction with a controlled entity within the meaning of section 512(b)(13)? <i>If "Yes," complete Schedule R, Part V, line 2</i>		X
36	Section 501(c)(3) organizations. Did the organization make any transfers to an exempt non-charitable related organization? <i>If "Yes," complete Schedule R, Part V, line 2</i>		X
37	Did the organization conduct more than 5% of its activities through an entity that is not a related organization and that is treated as a partnership for federal income tax purposes? <i>If "Yes," complete Schedule R, Part VI</i>		X
38	Did the organization complete Schedule O and provide explanations in Schedule O for Part VI, lines 11b and 19? Note. All Form 990 filers are required to complete Schedule O.	X	

Part V Statements Regarding Other IRS Filings and Tax Compliance

Check if Schedule O contains a response or note to any line in this Part V

Table with columns for line numbers (1a-14b), descriptions, and Yes/No checkboxes. Includes sections for Form 1096, Form W-2G, Form W-3, Form 990-T, Form 8886-T, Form 8282, Form 8899, Form 1098-C, Form 4966, Form 501(c)(7), Form 501(c)(12), Form 4947(a)(1), and Form 501(c)(29).

Part VI Governance, Management, and Disclosure For each "Yes" response to lines 2 through 7b below, and for a "No" response to line 8a, 8b, or 10b below, describe the circumstances, processes, or changes in Schedule O. See instructions.

Check if Schedule O contains a response or note to any line in this Part VI [X]

Section A. Governing Body and Management

Table with 3 columns: Question, Yes, No. Rows include: 1a Enter the number of voting members of the governing body at the end of the tax year. 1b Enter the number of voting members included in line 1a, above, who are independent. 2 Did any officer, director, trustee, or key employee have a family relationship or a business relationship with any other officer, director, trustee, or key employee? 3 Did the organization delegate control over management duties customarily performed by or under the direct supervision of officers, directors, or trustees, or key employees to a management company or other person? 4 Did the organization make any significant changes to its governing documents since the prior Form 990 was filed? 5 Did the organization become aware during the year of a significant diversion of the organization's assets? 6 Did the organization have members or stockholders? 7a Did the organization have members, stockholders, or other persons who had the power to elect or appoint one or more members of the governing body? 7b Are any governance decisions of the organization reserved to (or subject to approval by) members, stockholders, or persons other than the governing body? 8 Did the organization contemporaneously document the meetings held or written actions undertaken during the year by the following: a The governing body? b Each committee with authority to act on behalf of the governing body? 9 Is there any officer, director, trustee, or key employee listed in Part VII, Section A, who cannot be reached at the organization's mailing address? If "Yes," provide the names and addresses in Schedule O.

Section B. Policies (This Section B requests information about policies not required by the Internal Revenue Code.)

Table with 3 columns: Question, Yes, No. Rows include: 10a Did the organization have local chapters, branches, or affiliates? 10b If "Yes," did the organization have written policies and procedures governing the activities of such chapters, affiliates, and branches to ensure their operations are consistent with the organization's exempt purposes? 11a Has the organization provided a complete copy of this Form 990 to all members of its governing body before filing the form? 11b Describe in Schedule O the process, if any, used by the organization to review this Form 990. 12a Did the organization have a written conflict of interest policy? If "No," go to line 13 12b Were officers, directors, or trustees, and key employees required to disclose annually interests that could give rise to conflicts? 12c Did the organization regularly and consistently monitor and enforce compliance with the policy? If "Yes," describe in Schedule O how this was done 13 Did the organization have a written whistleblower policy? 14 Did the organization have a written document retention and destruction policy? 15 Did the process for determining compensation of the following persons include a review and approval by independent persons, comparability data, and contemporaneous substantiation of the deliberation and decision? 15a The organization's CEO, Executive Director, or top management official 15b Other officers or key employees of the organization If "Yes" to line 15a or 15b, describe the process in Schedule O (see instructions). 16a Did the organization invest in, contribute assets to, or participate in a joint venture or similar arrangement with a taxable entity during the year? 16b If "Yes," did the organization follow a written policy or procedure requiring the organization to evaluate its participation in joint venture arrangements under applicable federal tax law, and take steps to safeguard the organization's exempt status with respect to such arrangements?

Section C. Disclosure

- 17 List the states with which a copy of this Form 990 is required to be filed FL
18 Section 6104 requires an organization to make its Forms 1023 (or 1024 if applicable), 990, and 990-T (Section 501(c)(3)s only) available for public inspection. Indicate how you made these available. Check all that apply.
[] Own website [] Another's website [X] Upon request [] Other (explain in Schedule O)
19 Describe in Schedule O whether (and if so, how) the organization made its governing documents, conflict of interest policy, and financial statements available to the public during the tax year.
20 State the name, address, and telephone number of the person who possesses the organization's books and records: Paul R Reillo Ph.D., 1222 E Road, Loxahatchee, FL 33470 (561)790-5864

Part VII Compensation of Officers, Directors, Trustees, Key Employees, Highest Compensated Employees, and Independent Contractors

Check if Schedule O contains a response or note to any line in this Part VII

Section A. Officers, Directors, Trustees, Key Employees, and Highest Compensated Employees

1a Complete this table for all persons required to be listed. Report compensation for the calendar year ending with or within the organization's tax year.

- List all of the organization's **current** officers, directors, trustees (whether individuals or organizations), regardless of amount of compensation. Enter -0- in columns (D), (E), and (F) if no compensation was paid.
- List all of the organization's **current** key employees, if any. See instructions for definition of "key employee."
- List the organization's five **current** highest compensated employees (other than an officer, director, trustee, or key employee) who received reportable compensation (Box 5 of Form W-2 and/or Box 7 of Form 1099-MISC) of more than \$100,000 from the organization and any related organizations.
- List all of the organization's **former** officers, key employees, and highest compensated employees who received more than \$100,000 of reportable compensation from the organization and any related organizations.
- List all of the organization's **former directors or trustees** that received, in the capacity as a former director or trustee of the organization, more than \$10,000 of reportable compensation from the organization and any related organizations.

List persons in the following order: individual trustees or directors; institutional trustees; officers; key employees; highest compensated employees; and former such persons.

Check this box if neither the organization nor any related organization compensated any current officer, director, or trustee.

(A) Name and Title	(B) Average hours per week (list any hours for related organizations below dotted line)	(C) Position (do not check more than one box, unless person is both an officer and a director/trustee)						(D) Reportable compensation from the organization (W-2/1099-MISC)	(E) Reportable compensation from related organizations (W-2/1099-MISC)	(F) Estimated amount of other compensation from the organization and related organizations
		Individual trustee or director	Institutional trustee	Officer	Key employee	Highest compensated employee	Former			
(1) Paul R Reillo Ph.D. President/Treasurer	60.00	X		X				0.	0.	0.
(2) George Amato Ph.D. Secretary	10.00	X		X				0.	0.	0.
(3) Richard D Estes Ph.D. Director	10.00	X						0.	0.	0.
(4) Christopher Langen Esq. Director	10.00	X						0.	0.	0.
(5)										
(6)										
(7)										
(8)										
(9)										
(10)										
(11)										
(12)										
(13)										
(14)										

Part VII Section A. Officers, Directors, Trustees, Key Employees, and Highest Compensated Employees (continued)

(A) Name and title	(B) Average hours per week (list any hours for related organizations below dotted line)	(C) Position (do not check more than one box, unless person is both an officer and a director/trustee)						(D) Reportable compensation from the organization (W-2/1099-MISC)	(E) Reportable compensation from related organizations (W-2/1099-MISC)	(F) Estimated amount of other compensation from the organization and related organizations
		Individual trustee or director	Institutional trustee	Officer	Key employee	Highest compensated employee	Former			
(15)										
(16)										
(17)										
(18)										
(19)										
(20)										
(21)										
(22)										
(23)										
(24)										
(25)										

1b Sub-total	0.	0.	0.
c Total from continuation sheets to Part VII, Section A			
d Total (add lines 1b and 1c)	0.	0.	0.

2 Total number of individuals (including but not limited to those listed above) who received more than \$100,000 of reportable compensation from the organization

	Yes	No
3 Did the organization list any former officer, director, or trustee, key employee, or highest compensated employee on line 1a? <i>If "Yes," complete Schedule J for such individual</i>		X
4 For any individual listed on line 1a, is the sum of reportable compensation and other compensation from the organization and related organizations greater than \$150,000? <i>If "Yes," complete Schedule J for such individual</i>		X
5 Did any person listed on line 1a receive or accrue compensation from any unrelated organization or individual for services rendered to the organization? <i>If "Yes," complete Schedule J for such person</i>		X

Section B. Independent Contractors

1 Complete this table for your five highest compensated independent contractors that received more than \$100,000 of compensation from the organization. Report compensation for the calendar year ending with or within the organization's tax year.

(A) Name and business address	(B) Description of services	(C) Compensation

2 Total number of independent contractors (including but not limited to those listed above) who received more than \$100,000 of compensation from the organization

Part VIII Statement of Revenue

Check if Schedule O contains a response or note to any line in this Part VIII

				(A) Total revenue	(B) Related or exempt function revenue	(C) Unrelated business revenue	(D) Revenue excluded from tax under sections 512-514	
Contributions, Gifts, Grants and Other Similar Amounts	1a	Federated campaigns	1a					
	b	Membership dues	1b					
	c	Fundraising events	1c					
	d	Related organizations	1d					
	e	Government grants (contributions)	1e					
	f	All other contributions, gifts, grants, and similar amounts not included above	1f	758,603.				
	g	Noncash contributions included in lines 1a-1f: \$						
	h	Total. Add lines 1a-1f ▶		758,603.				
Program Service Revenue				Business Code				
	2a	-----						
	b	-----						
	c	-----						
	d	-----						
	e	-----						
	f	All other program service revenue .						
g	Total. Add lines 2a-2f ▶							
Other Revenue	3	Investment income (including dividends, interest, and other similar amounts) ▶		4,993.	0.	0.	4,993.	
	4	Income from investment of tax-exempt bond proceeds ▶						
	5	Royalties ▶						
	6a	Gross rents	(i) Real	(ii) Personal				
	b	Less: rental expenses						
	c	Rental income or (loss)						
	d	Net rental income or (loss) ▶						
	7a	Gross amount from sales of assets other than inventory	(i) Securities	(ii) Other				
	b	Less: cost or other basis and sales expenses						
c	Gain or (loss)							
d	Net gain or (loss) ▶							
8a	Gross income from fundraising events (not including \$ of contributions reported on line 1c). See Part IV, line 18 a							
b	Less: direct expenses b							
c	Net income or (loss) from fundraising events . ▶							
9a	Gross income from gaming activities. See Part IV, line 19 a							
		Less: direct expenses b						
		Net income or (loss) from gaming activities . . ▶						
10a	Gross sales of inventory, less returns and allowances a							
		Less: cost of goods sold b						
		Net income or (loss) from sales of inventory . . ▶						
Miscellaneous Revenue			Business Code					
11a	Refund of Prior year Grant	xxxx	15,831.	15,831.	0.	0.		
b	-----							
c	-----							
d	All other revenue							
e	Total. Add lines 11a-11d ▶		15,831.					
12	Total revenue. See instructions. ▶		779,427.	15,831.	0.	4,993.		

Part IX Statement of Functional Expenses

Section 501(c)(3) and 501(c)(4) organizations must complete all columns. All other organizations must complete column (A).

Check if Schedule O contains a response or note to any line in this Part IX

Do not include amounts reported on lines 6b, 7b, 8b, 9b, and 10b of Part VIII.

	(A) Total expenses	(B) Program service expenses	(C) Management and general expenses	(D) Fundraising expenses
1 Grants and other assistance to domestic organizations and domestic governments. See Part IV, line 21				
2 Grants and other assistance to domestic individuals. See Part IV, line 22				
3 Grants and other assistance to foreign organizations, foreign governments, and foreign individuals. See Part IV, lines 15 and 16	183,080.	183,080.		
4 Benefits paid to or for members				
5 Compensation of current officers, directors, trustees, and key employees				
6 Compensation not included above, to disqualified persons (as defined under section 4958(f)(1)) and persons described in section 4958(c)(3)(B)				
7 Other salaries and wages	182,464.	182,464.	0.	0.
8 Pension plan accruals and contributions (include section 401(k) and 403(b) employer contributions)				
9 Other employee benefits				
10 Payroll taxes	14,267.	14,267.	0.	0.
11 Fees for services (non-employees):				
a Management				
b Legal				
c Accounting	2,025.	0.	2,025.	0.
d Lobbying				
e Professional fundraising services. See Part IV, line 17				
f Investment management fees				
g Other. (If line 11g amount exceeds 10% of line 25, column (A) amount, list line 11g expenses on Schedule O.)				
12 Advertising and promotion				
13 Office expenses	2,103.	1,914.	189.	0.
14 Information technology				
15 Royalties				
16 Occupancy				
17 Travel				
18 Payments of travel or entertainment expenses for any federal, state, or local public officials				
19 Conferences, conventions, and meetings				
20 Interest				
21 Payments to affiliates				
22 Depreciation, depletion, and amortization	4,788.	4,788.	0.	0.
23 Insurance	82.	82.	0.	0.
24 Other expenses. Itemize expenses not covered above (List miscellaneous expenses in line 24e. If line 24e amount exceeds 10% of line 25, column (A) amount, list line 24e expenses on Schedule O.)				
a Feed and Supplies	90,950.	90,950.	0.	0.
b Utilities and Fuel	6,408.	6,408.	0.	0.
c Development and Education	3,015.	0.	0.	3,015.
d Communications	2,380.	2,380.	0.	0.
e All other expenses	120,217.	120,217.	0.	0.
25 Total functional expenses. Add lines 1 through 24e	611,779.	606,550.	2,214.	3,015.
26 Joint costs. Complete this line only if the organization reported in column (B) joint costs from a combined educational campaign and fundraising solicitation. Check here <input type="checkbox"/> if following SOP 98-2 (ASC 958-720)				

Part X Balance Sheet

Check if Schedule O contains a response or note to any line in this Part X

		(A)		(B)
		Beginning of year		End of year
Assets	1 Cash—non-interest-bearing	306,428.	1	474,559.
	2 Savings and temporary cash investments	861,091.	2	866,085.
	3 Pledges and grants receivable, net		3	
	4 Accounts receivable, net		4	
	5 Loans and other receivables from current and former officers, directors, trustees, key employees, and highest compensated employees. Complete Part II of Schedule L		5	
	6 Loans and other receivables from other disqualified persons (as defined under section 4958(f)(1)), persons described in section 4958(c)(3)(B), and contributing employers and sponsoring organizations of section 501(c)(9) voluntary employees' beneficiary organizations (see instructions). Complete Part II of Schedule L		6	
	7 Notes and loans receivable, net		7	
	8 Inventories for sale or use		8	
	9 Prepaid expenses and deferred charges		9	
	10a Land, buildings, and equipment: cost or other basis. Complete Part VI of Schedule D	10a 996,636.		
	b Less: accumulated depreciation	10b 81,942.	919,482.	10c 914,694.
	11 Investments—publicly traded securities	40,002.	11	51,084.
	12 Investments—other securities. See Part IV, line 11		12	
	13 Investments—program-related. See Part IV, line 11		13	
	14 Intangible assets		14	
	15 Other assets. See Part IV, line 11	500.	15	500.
16 Total assets. Add lines 1 through 15 (must equal line 34)		2,127,503.	16	2,306,922.
Liabilities	17 Accounts payable and accrued expenses		17	
	18 Grants payable		18	
	19 Deferred revenue		19	
	20 Tax-exempt bond liabilities		20	
	21 Escrow or custodial account liability. Complete Part IV of Schedule D		21	
	22 Loans and other payables to current and former officers, directors, trustees, key employees, highest compensated employees, and disqualified persons. Complete Part II of Schedule L		22	
	23 Secured mortgages and notes payable to unrelated third parties		23	
	24 Unsecured notes and loans payable to unrelated third parties		24	
	25 Other liabilities (including federal income tax, payables to related third parties, and other liabilities not included on lines 17-24). Complete Part X of Schedule D	3,995.	25	5,171.
	26 Total liabilities. Add lines 17 through 25	3,995.	26	5,171.
Net Assets or Fund Balances	Organizations that follow SFAS 117 (ASC 958), check here <input checked="" type="checkbox"/> and complete lines 27 through 29, and lines 33 and 34.			
	27 Unrestricted net assets	2,123,508.	27	2,301,751.
	28 Temporarily restricted net assets		28	
	29 Permanently restricted net assets		29	
	Organizations that do not follow SFAS 117 (ASC 958), check here <input type="checkbox"/> and complete lines 30 through 34.			
	30 Capital stock or trust principal, or current funds		30	
	31 Paid-in or capital surplus, or land, building, or equipment fund		31	
	32 Retained earnings, endowment, accumulated income, or other funds		32	
33 Total net assets or fund balances	2,123,508.	33	2,301,751.	
34 Total liabilities and net assets/fund balances	2,127,503.	34	2,306,922.	

Part XI Reconciliation of Net Assets

Check if Schedule O contains a response or note to any line in this Part XI

1	Total revenue (must equal Part VIII, column (A), line 12)	1	779,427.
2	Total expenses (must equal Part IX, column (A), line 25)	2	611,779.
3	Revenue less expenses. Subtract line 2 from line 1	3	167,648.
4	Net assets or fund balances at beginning of year (must equal Part X, line 33, column (A))	4	2,123,508.
5	Net unrealized gains (losses) on investments	5	11,083.
6	Donated services and use of facilities	6	
7	Investment expenses	7	
8	Prior period adjustments	8	
9	Other changes in net assets or fund balances (explain in Schedule O)	9	
10	Net assets or fund balances at end of year. Combine lines 3 through 9 (must equal Part X, line 33, column (B))	10	2,302,239.

Part XII Financial Statements and Reporting

Check if Schedule O contains a response or note to any line in this Part XII

		Yes	No
1	Accounting method used to prepare the Form 990: <input checked="" type="checkbox"/> Cash <input type="checkbox"/> Accrual <input type="checkbox"/> Other _____ If the organization changed its method of accounting from a prior year or checked "Other," explain in Schedule O.		
2a	Were the organization's financial statements compiled or reviewed by an independent accountant? If "Yes," check a box below to indicate whether the financial statements for the year were compiled or reviewed on a separate basis, consolidated basis, or both: <input type="checkbox"/> Separate basis <input type="checkbox"/> Consolidated basis <input type="checkbox"/> Both consolidated and separate basis		X
2b	Were the organization's financial statements audited by an independent accountant? If "Yes," check a box below to indicate whether the financial statements for the year were audited on a separate basis, consolidated basis, or both: <input type="checkbox"/> Separate basis <input type="checkbox"/> Consolidated basis <input type="checkbox"/> Both consolidated and separate basis		X
2c	If "Yes" to line 2a or 2b, does the organization have a committee that assumes responsibility for oversight of the audit, review, or compilation of its financial statements and selection of an independent accountant? If the organization changed either its oversight process or selection process during the tax year, explain in Schedule O.		
3a	As a result of a federal award, was the organization required to undergo an audit or audits as set forth in the Single Audit Act and OMB Circular A-133?		X
3b	If "Yes," did the organization undergo the required audit or audits? If the organization did not undergo the required audit or audits, explain why in Schedule O and describe any steps taken to undergo such audits.		

SCHEDULE A
(Form 990 or 990-EZ)

Department of the Treasury
Internal Revenue Service

Public Charity Status and Public Support

Complete if the organization is a section 501(c)(3) organization or a section 4947(a)(1) nonexempt charitable trust.

▶ Attach to Form 990 or Form 990-EZ.

▶ Go to www.irs.gov/Form990 for instructions and the latest information.

OMB No. 1545-0047

2017

Open to Public Inspection

Name of the organization Rare Species Conservatory Foundation	Employer identification number 65-0560456
--	--

Part I Reason for Public Charity Status (All organizations must complete this part.) See instructions.

The organization is not a private foundation because it is: (For lines 1 through 12, check only one box.)

- 1 A church, convention of churches, or association of churches described in **section 170(b)(1)(A)(i)**.
- 2 A school described in **section 170(b)(1)(A)(ii)**. (Attach Schedule E (Form 990 or 990-EZ).)
- 3 A hospital or a cooperative hospital service organization described in **section 170(b)(1)(A)(iii)**.
- 4 A medical research organization operated in conjunction with a hospital described in **section 170(b)(1)(A)(iii)**. Enter the hospital's name, city, and state: _____
- 5 An organization operated for the benefit of a college or university owned or operated by a governmental unit described in **section 170(b)(1)(A)(iv)**. (Complete Part II.)
- 6 A federal, state, or local government or governmental unit described in **section 170(b)(1)(A)(v)**.
- 7 An organization that normally receives a substantial part of its support from a governmental unit or from the general public described in **section 170(b)(1)(A)(vi)**. (Complete Part II.)
- 8 A community trust described in **section 170(b)(1)(A)(vi)**. (Complete Part II.)
- 9 An agricultural research organization described in **section 170(b)(1)(A)(ix)** operated in conjunction with a land-grant college or university or a non-land-grant college of agriculture (see instructions). Enter the name, city, and state of the college or university: _____
- 10 An organization that normally receives: (1) more than 33¹/₃% of its support from contributions, membership fees, and gross receipts from activities related to its exempt functions—subject to certain exceptions, and (2) no more than 33¹/₃% of its support from gross investment income and unrelated business taxable income (less section 511 tax) from businesses acquired by the organization after June 30, 1975. See **section 509(a)(2)**. (Complete Part III.)
- 11 An organization organized and operated exclusively to test for public safety. See **section 509(a)(4)**.
- 12 An organization organized and operated exclusively for the benefit of, to perform the functions of, or to carry out the purposes of one or more publicly supported organizations described in **section 509(a)(1)** or **section 509(a)(2)**. See **section 509(a)(3)**. Check the box in lines 12a through 12d that describes the type of supporting organization and complete lines 12e, 12f, and 12g.
 - a **Type I.** A supporting organization operated, supervised, or controlled by its supported organization(s), typically by giving the supported organization(s) the power to regularly appoint or elect a majority of the directors or trustees of the supporting organization. **You must complete Part IV, Sections A and B.**
 - b **Type II.** A supporting organization supervised or controlled in connection with its supported organization(s), by having control or management of the supporting organization vested in the same persons that control or manage the supported organization(s). **You must complete Part IV, Sections A and C.**
 - c **Type III functionally integrated.** A supporting organization operated in connection with, and functionally integrated with, its supported organization(s) (see instructions). **You must complete Part IV, Sections A, D, and E.**
 - d **Type III non-functionally integrated.** A supporting organization operated in connection with its supported organization(s) that is not functionally integrated. The organization generally must satisfy a distribution requirement and an attentiveness requirement (see instructions). **You must complete Part IV, Sections A and D, and Part V.**
 - e Check this box if the organization received a written determination from the IRS that it is a Type I, Type II, Type III functionally integrated, or Type III non-functionally integrated supporting organization.
 - f Enter the number of supported organizations
 - g Provide the following information about the supported organization(s).

(i) Name of supported organization	(ii) EIN	(iii) Type of organization (described on lines 1-10 above (see instructions))	(iv) Is the organization listed in your governing document?		(v) Amount of monetary support (see instructions)	(vi) Amount of other support (see instructions)
			Yes	No		
(A)						
(B)						
(C)						
(D)						
(E)						
Total						

Part II Support Schedule for Organizations Described in Sections 170(b)(1)(A)(iv) and 170(b)(1)(A)(vi)

(Complete only if you checked the box on line 5, 7, or 8 of Part I or if the organization failed to qualify under Part III. If the organization fails to qualify under the tests listed below, please complete Part III.)

Section A. Public Support

Calendar year (or fiscal year beginning in) ▶	(a) 2013	(b) 2014	(c) 2015	(d) 2016	(e) 2017	(f) Total
1 Gifts, grants, contributions, and membership fees received. (Do not include any "unusual grants.")	320,408.	346,661.	662,781.	903,599.	774,430.	3,007,879.
2 Tax revenues levied for the organization's benefit and either paid to or expended on its behalf						
3 The value of services or facilities furnished by a governmental unit to the organization without charge						
4 Total. Add lines 1 through 3	320,408.	346,661.	662,781.	903,599.	774,430.	3,007,879.
5 The portion of total contributions by each person (other than a governmental unit or publicly supported organization) included on line 1 that exceeds 2% of the amount shown on line 11, column (f)						190,821.
6 Public support. Subtract line 5 from line 4						2,817,058.

Section B. Total Support

Calendar year (or fiscal year beginning in) ▶	(a) 2013	(b) 2014	(c) 2015	(d) 2016	(e) 2017	(f) Total
7 Amounts from line 4	320,408.	346,661.	662,781.	903,599.	774,430.	3,007,879.
8 Gross income from interest, dividends, payments received on securities loans, rents, royalties, and income from similar sources	747.	793.	695.	4,561.	4,993.	11,789.
9 Net income from unrelated business activities, whether or not the business is regularly carried on						
10 Other income. Do not include gain or loss from the sale of capital assets (Explain in Part VI.)						
11 Total support. Add lines 7 through 10						3,019,668.
12 Gross receipts from related activities, etc. (see instructions)					12	
13 First five years. If the Form 990 is for the organization's first, second, third, fourth, or fifth tax year as a section 501(c)(3) organization, check this box and stop here ▶ <input type="checkbox"/>						

Section C. Computation of Public Support Percentage

14 Public support percentage for 2017 (line 6, column (f) divided by line 11, column (f))	14	93.29 %
15 Public support percentage from 2016 Schedule A, Part II, line 14	15	90.58 %
16a 33 1/3% support test—2017. If the organization did not check the box on line 13, and line 14 is 33 1/3% or more, check this box and stop here. The organization qualifies as a publicly supported organization ▶ <input checked="" type="checkbox"/>		
b 33 1/3% support test—2016. If the organization did not check a box on line 13 or 16a, and line 15 is 33 1/3% or more, check this box and stop here. The organization qualifies as a publicly supported organization ▶ <input type="checkbox"/>		
17a 10%-facts-and-circumstances test—2017. If the organization did not check a box on line 13, 16a, or 16b, and line 14 is 10% or more, and if the organization meets the "facts-and-circumstances" test, check this box and stop here. Explain in Part VI how the organization meets the "facts-and-circumstances" test. The organization qualifies as a publicly supported organization ▶ <input type="checkbox"/>		
b 10%-facts-and-circumstances test—2016. If the organization did not check a box on line 13, 16a, 16b, or 17a, and line 15 is 10% or more, and if the organization meets the "facts-and-circumstances" test, check this box and stop here. Explain in Part VI how the organization meets the "facts-and-circumstances" test. The organization qualifies as a publicly supported organization ▶ <input type="checkbox"/>		
18 Private foundation. If the organization did not check a box on line 13, 16a, 16b, 17a, or 17b, check this box and see instructions ▶ <input type="checkbox"/>		

Part III Support Schedule for Organizations Described in Section 509(a)(2)

(Complete only if you checked the box on line 10 of Part I or if the organization failed to qualify under Part II. If the organization fails to qualify under the tests listed below, please complete Part II.)

Section A. Public Support

Calendar year (or fiscal year beginning in) ►	(a) 2013	(b) 2014	(c) 2015	(d) 2016	(e) 2017	(f) Total
1 Gifts, grants, contributions, and membership fees received. (Do not include any "unusual grants.")						
2 Gross receipts from admissions, merchandise sold or services performed, or facilities furnished in any activity that is related to the organization's tax-exempt purpose						
3 Gross receipts from activities that are not an unrelated trade or business under section 513						
4 Tax revenues levied for the organization's benefit and either paid to or expended on its behalf						
5 The value of services or facilities furnished by a governmental unit to the organization without charge						
6 Total. Add lines 1 through 5						
7a Amounts included on lines 1, 2, and 3 received from disqualified persons						
b Amounts included on lines 2 and 3 received from other than disqualified persons that exceed the greater of \$5,000 or 1% of the amount on line 13 for the year						
c Add lines 7a and 7b						
8 Public support. (Subtract line 7c from line 6.)						

Section B. Total Support

Calendar year (or fiscal year beginning in) ►	(a) 2013	(b) 2014	(c) 2015	(d) 2016	(e) 2017	(f) Total
9 Amounts from line 6						
10a Gross income from interest, dividends, payments received on securities loans, rents, royalties, and income from similar sources						
b Unrelated business taxable income (less section 511 taxes) from businesses acquired after June 30, 1975						
c Add lines 10a and 10b						
11 Net income from unrelated business activities not included in line 10b, whether or not the business is regularly carried on						
12 Other income. Do not include gain or loss from the sale of capital assets (Explain in Part VI.)						
13 Total support. (Add lines 9, 10c, 11, and 12.)						
14 First five years. If the Form 990 is for the organization's first, second, third, fourth, or fifth tax year as a section 501(c)(3) organization, check this box and stop here <input type="checkbox"/>						

Section C. Computation of Public Support Percentage

15 Public support percentage for 2017 (line 8, column (f) divided by line 13, column (f))	15	%
16 Public support percentage from 2016 Schedule A, Part III, line 15	16	%

Section D. Computation of Investment Income Percentage

17 Investment income percentage for 2017 (line 10c, column (f) divided by line 13, column (f))	17	%
18 Investment income percentage from 2016 Schedule A, Part III, line 17	18	%

- 19a 33 1/3% support tests—2017.** If the organization did not check the box on line 14, and line 15 is more than 33 1/3%, and line 17 is not more than 33 1/3%, check this box and **stop here.** The organization qualifies as a publicly supported organization
- b 33 1/3% support tests—2016.** If the organization did not check a box on line 14 or line 19a, and line 16 is more than 33 1/3%, and line 18 is not more than 33 1/3%, check this box and **stop here.** The organization qualifies as a publicly supported organization
- 20 Private foundation.** If the organization did not check a box on line 14, 19a, or 19b, check this box and see instructions

Part IV Supporting Organizations

(Complete only if you checked a box in line 12 on Part I. If you checked 12a of Part I, complete Sections A and B. If you checked 12b of Part I, complete Sections A and C. If you checked 12c of Part I, complete Sections A, D, and E. If you checked 12d of Part I, complete Sections A and D, and complete Part V.)

Section A. All Supporting Organizations

	Yes	No
1 Are all of the organization's supported organizations listed by name in the organization's governing documents? <i>If "No," describe in Part VI how the supported organizations are designated. If designated by class or purpose, describe the designation. If historic and continuing relationship, explain.</i>		
2 Did the organization have any supported organization that does not have an IRS determination of status under section 509(a)(1) or (2)? <i>If "Yes," explain in Part VI how the organization determined that the supported organization was described in section 509(a)(1) or (2).</i>		
3a Did the organization have a supported organization described in section 501(c)(4), (5), or (6)? <i>If "Yes," answer (b) and (c) below.</i>		
b Did the organization confirm that each supported organization qualified under section 501(c)(4), (5), or (6) and satisfied the public support tests under section 509(a)(2)? <i>If "Yes," describe in Part VI when and how the organization made the determination.</i>		
c Did the organization ensure that all support to such organizations was used exclusively for section 170(c)(2)(B) purposes? <i>If "Yes," explain in Part VI what controls the organization put in place to ensure such use.</i>		
4a Was any supported organization not organized in the United States ("foreign supported organization")? <i>If "Yes," and if you checked 12a or 12b in Part I, answer (b) and (c) below.</i>		
b Did the organization have ultimate control and discretion in deciding whether to make grants to the foreign supported organization? <i>If "Yes," describe in Part VI how the organization had such control and discretion despite being controlled or supervised by or in connection with its supported organizations.</i>		
c Did the organization support any foreign supported organization that does not have an IRS determination under sections 501(c)(3) and 509(a)(1) or (2)? <i>If "Yes," explain in Part VI what controls the organization used to ensure that all support to the foreign supported organization was used exclusively for section 170(c)(2)(B) purposes.</i>		
5a Did the organization add, substitute, or remove any supported organizations during the tax year? <i>If "Yes," answer (b) and (c) below (if applicable). Also, provide detail in Part VI, including (i) the names and EIN numbers of the supported organizations added, substituted, or removed; (ii) the reasons for each such action; (iii) the authority under the organization's organizing document authorizing such action; and (iv) how the action was accomplished (such as by amendment to the organizing document).</i>		
b Type I or Type II only. Was any added or substituted supported organization part of a class already designated in the organization's organizing document?		
c Substitutions only. Was the substitution the result of an event beyond the organization's control?		
6 Did the organization provide support (whether in the form of grants or the provision of services or facilities) to anyone other than (i) its supported organizations, (ii) individuals that are part of the charitable class benefited by one or more of its supported organizations, or (iii) other supporting organizations that also support or benefit one or more of the filing organization's supported organizations? <i>If "Yes," provide detail in Part VI.</i>		
7 Did the organization provide a grant, loan, compensation, or other similar payment to a substantial contributor (defined in section 4958(c)(3)(C)), a family member of a substantial contributor, or a 35% controlled entity with regard to a substantial contributor? <i>If "Yes," complete Part I of Schedule L (Form 990 or 990-EZ).</i>		
8 Did the organization make a loan to a disqualified person (as defined in section 4958) not described in line 7? <i>If "Yes," complete Part I of Schedule L (Form 990 or 990-EZ).</i>		
9a Was the organization controlled directly or indirectly at any time during the tax year by one or more disqualified persons as defined in section 4946 (other than foundation managers and organizations described in section 509(a)(1) or (2))? <i>If "Yes," provide detail in Part VI.</i>		
b Did one or more disqualified persons (as defined in line 9a) hold a controlling interest in any entity in which the supporting organization had an interest? <i>If "Yes," provide detail in Part VI.</i>		
c Did a disqualified person (as defined in line 9a) have an ownership interest in, or derive any personal benefit from, assets in which the supporting organization also had an interest? <i>If "Yes," provide detail in Part VI.</i>		
10a Was the organization subject to the excess business holdings rules of section 4943 because of section 4943(f) (regarding certain Type II supporting organizations, and all Type III non-functionally integrated supporting organizations)? <i>If "Yes," answer 10b below.</i>		
b Did the organization have any excess business holdings in the tax year? <i>(Use Schedule C, Form 4720, to determine whether the organization had excess business holdings.)</i>		

Part IV Supporting Organizations (continued)

		Yes	No
11	Has the organization accepted a gift or contribution from any of the following persons?		
a	A person who directly or indirectly controls, either alone or together with persons described in (b) and (c) below, the governing body of a supported organization?		
b	A family member of a person described in (a) above?		
c	A 35% controlled entity of a person described in (a) or (b) above? If "Yes" to a, b, or c, provide detail in Part VI .		

Section B. Type I Supporting Organizations

		Yes	No
1	Did the directors, trustees, or membership of one or more supported organizations have the power to regularly appoint or elect at least a majority of the organization's directors or trustees at all times during the tax year? If "No," describe in Part VI how the supported organization(s) effectively operated, supervised, or controlled the organization's activities. If the organization had more than one supported organization, describe how the powers to appoint and/or remove directors or trustees were allocated among the supported organizations and what conditions or restrictions, if any, applied to such powers during the tax year.		
2	Did the organization operate for the benefit of any supported organization other than the supported organization(s) that operated, supervised, or controlled the supporting organization? If "Yes," explain in Part VI how providing such benefit carried out the purposes of the supported organization(s) that operated, supervised, or controlled the supporting organization.		

Section C. Type II Supporting Organizations

		Yes	No
1	Were a majority of the organization's directors or trustees during the tax year also a majority of the directors or trustees of each of the organization's supported organization(s)? If "No," describe in Part VI how control or management of the supporting organization was vested in the same persons that controlled or managed the supported organization(s).		

Section D. All Type III Supporting Organizations

		Yes	No
1	Did the organization provide to each of its supported organizations, by the last day of the fifth month of the organization's tax year, (i) a written notice describing the type and amount of support provided during the prior tax year, (ii) a copy of the Form 990 that was most recently filed as of the date of notification, and (iii) copies of the organization's governing documents in effect on the date of notification, to the extent not previously provided?		
2	Were any of the organization's officers, directors, or trustees either (i) appointed or elected by the supported organization(s) or (ii) serving on the governing body of a supported organization? If "No," explain in Part VI how the organization maintained a close and continuous working relationship with the supported organization(s).		
3	By reason of the relationship described in (2), did the organization's supported organizations have a significant voice in the organization's investment policies and in directing the use of the organization's income or assets at all times during the tax year? If "Yes," describe in Part VI the role the organization's supported organizations played in this regard.		

Section E. Type III Functionally Integrated Supporting Organizations

1	Check the box next to the method that the organization used to satisfy the Integral Part Test during the year (see instructions).		
a	<input type="checkbox"/> The organization satisfied the Activities Test. Complete line 2 below.		
b	<input type="checkbox"/> The organization is the parent of each of its supported organizations. Complete line 3 below.		
c	<input type="checkbox"/> The organization supported a governmental entity. Describe in Part VI how you supported a government entity (see instructions).		
2	Activities Test. Answer (a) and (b) below.		
a	Did substantially all of the organization's activities during the tax year directly further the exempt purposes of the supported organization(s) to which the organization was responsive? If "Yes," then in Part VI identify those supported organizations and explain how these activities directly furthered their exempt purposes, how the organization was responsive to those supported organizations, and how the organization determined that these activities constituted substantially all of its activities.		
b	Did the activities described in (a) constitute activities that, but for the organization's involvement, one or more of the organization's supported organization(s) would have been engaged in? If "Yes," explain in Part VI the reasons for the organization's position that its supported organization(s) would have engaged in these activities but for the organization's involvement.		
3	Parent of Supported Organizations. Answer (a) and (b) below.		
a	Did the organization have the power to regularly appoint or elect a majority of the officers, directors, or trustees of each of the supported organizations? Provide details in Part VI .		
b	Did the organization exercise a substantial degree of direction over the policies, programs, and activities of each of its supported organizations? If "Yes," describe in Part VI the role played by the organization in this regard.		

Part V Type III Non-Functionally Integrated 509(a)(3) Supporting Organizations

- 1 Check here if the organization satisfied the Integral Part Test as a qualifying trust on Nov. 20, 1970 (explain in Part VI). See instructions. All other Type III non-functionally integrated supporting organizations must complete Sections A through E.

Section A - Adjusted Net Income		(A) Prior Year	(B) Current Year (optional)
1 Net short-term capital gain	1		
2 Recoveries of prior-year distributions	2		
3 Other gross income (see instructions)	3		
4 Add lines 1 through 3.	4		
5 Depreciation and depletion	5		
6 Portion of operating expenses paid or incurred for production or collection of gross income or for management, conservation, or maintenance of property held for production of income (see instructions)	6		
7 Other expenses (see instructions)	7		
8 Adjusted Net Income (subtract lines 5, 6, and 7 from line 4).	8		

Section B - Minimum Asset Amount		(A) Prior Year	(B) Current Year (optional)
1 Aggregate fair market value of all non-exempt-use assets (see instructions for short tax year or assets held for part of year):			
a Average monthly value of securities	1a		
b Average monthly cash balances	1b		
c Fair market value of other non-exempt-use assets	1c		
d Total (add lines 1a, 1b, and 1c)	1d		
e Discount claimed for blockage or other factors (explain in detail in Part VI):			
2 Acquisition indebtedness applicable to non-exempt-use assets	2		
3 Subtract line 2 from line 1d.	3		
4 Cash deemed held for exempt use. Enter 1-1/2% of line 3 (for greater amount, see instructions).	4		
5 Net value of non-exempt-use assets (subtract line 4 from line 3)	5		
6 Multiply line 5 by .035.	6		
7 Recoveries of prior-year distributions	7		
8 Minimum Asset Amount (add line 7 to line 6)	8		

Section C - Distributable Amount		(A) Prior Year	(B) Current Year
1 Adjusted net income for prior year (from Section A, line 8, Column A)	1		
2 Enter 85% of line 1.	2		
3 Minimum asset amount for prior year (from Section B, line 8, Column A)	3		
4 Enter greater of line 2 or line 3.	4		
5 Income tax imposed in prior year	5		
6 Distributable Amount. Subtract line 5 from line 4, unless subject to emergency temporary reduction (see instructions).	6		

- 7 Check here if the current year is the organization's first as a non-functionally integrated Type III supporting organization (see instructions).

Part V Type III Non-Functionally Integrated 509(a)(3) Supporting Organizations *(continued)*

Section D - Distributions		Current Year	
1	Amounts paid to supported organizations to accomplish exempt purposes		
2	Amounts paid to perform activity that directly furthers exempt purposes of supported organizations, in excess of income from activity		
3	Administrative expenses paid to accomplish exempt purposes of supported organizations		
4	Amounts paid to acquire exempt-use assets		
5	Qualified set-aside amounts (prior IRS approval required)		
6	Other distributions (describe in Part VI). See instructions.		
7	Total annual distributions. Add lines 1 through 6.		
8	Distributions to attentive supported organizations to which the organization is responsive (provide details in Part VI). See instructions.		
9	Distributable amount for 2017 from Section C, line 6		
10	Line 8 amount divided by line 9 amount		
Section E - Distribution Allocations (see instructions)		(i) Excess Distributions	(ii) Underdistributions Pre-2017
1	Distributable amount for 2017 from Section C, line 6		
2	Underdistributions, if any, for years prior to 2017 (reasonable cause required—explain in Part VI). See instructions.		
3	Excess distributions carryover, if any, to 2017		
a			
b	From 2013		
c	From 2014		
d	From 2015		
e	From 2016		
f	Total of lines 3a through e		
g	Applied to underdistributions of prior years		
h	Applied to 2017 distributable amount		
i	Carryover from 2012 not applied (see instructions)		
j	Remainder. Subtract lines 3g, 3h, and 3i from 3f.		
4	Distributions for 2017 from Section D, line 7: \$		
a	Applied to underdistributions of prior years		
b	Applied to 2017 distributable amount		
c	Remainder. Subtract lines 4a and 4b from 4.		
5	Remaining underdistributions for years prior to 2017, if any. Subtract lines 3g and 4a from line 2. For result greater than zero, explain in Part VI . See instructions.		
6	Remaining underdistributions for 2017. Subtract lines 3h and 4b from line 1. For result greater than zero, explain in Part VI . See instructions.		
7	Excess distributions carryover to 2018. Add lines 3j and 4c.		
8	Breakdown of line 7:		
a	Excess from 2013		
b	Excess from 2014		
c	Excess from 2015		
d	Excess from 2016		
e	Excess from 2017		

Part VI

Supplemental Information. Provide the explanations required by Part II, line 10; Part II, line 17a or 17b; Part III, line 12; Part IV, Section A, lines 1, 2, 3b, 3c, 4b, 4c, 5a, 6, 9a, 9b, 9c, 11a, 11b, and 11c; Part IV, Section B, lines 1 and 2; Part IV, Section C, line 1; Part IV, Section D, lines 2 and 3; Part IV, Section E, lines 1c, 2a, 2b, 3a, and 3b; Part V, line 1; Part V, Section B, line 1e; Part V, Section D, lines 5, 6, and 8; and Part V, Section E, lines 2, 5, and 6. Also complete this part for any additional information. (See instructions.)

See Statement

Form area consisting of multiple horizontal dashed lines for supplemental information.

Schedule A: Public Charity Status and Public Support

Part VI: Supplemental Information

Continuation Statement

Other Addl Info	The Organization received an unusual grant during 2014. Brad Kelly/ Rum Creek Ranch LLC gave \$100,000 as a one-time, 100% restricted grant to support field conservation efforts by the Bongo surveillance Program operated in Kenya by the Rhino Ark Charitable Trust. No funds retained by RSCF for overhead, indirect expenses, grant administration or operations.
-----------------	---

Schedule of Contributors

2017

▶ Attach to Form 990, Form 990-EZ, or Form 990-PF.
 ▶ Go to www.irs.gov/Form990 for the latest information.

Name of the organization <u>Rare Species Conservatory Foundation</u>	Employer identification number <u>65-0560456</u>
---	---

Organization type (check one):

Filers of:

Section:

- Form 990 or 990-EZ
 - 501(c)(3) (enter number) organization
 - 4947(a)(1) nonexempt charitable trust **not** treated as a private foundation
 - 527 political organization
- Form 990-PF
 - 501(c)(3) exempt private foundation
 - 4947(a)(1) nonexempt charitable trust treated as a private foundation
 - 501(c)(3) taxable private foundation

Check if your organization is covered by the **General Rule** or a **Special Rule**.

Note: Only a section 501(c)(7), (8), or (10) organization can check boxes for both the General Rule and a Special Rule. See instructions.

General Rule

- For an organization filing Form 990, 990-EZ, or 990-PF that received, during the year, contributions totaling \$5,000 or more (in money or property) from any one contributor. Complete Parts I and II. See instructions for determining a contributor's total contributions.

Special Rules

- For an organization described in section 501(c)(3) filing Form 990 or 990-EZ that met the 33 1/3% support test of the regulations under sections 509(a)(1) and 170(b)(1)(A)(vi), that checked Schedule A (Form 990 or 990-EZ), Part II, line 13, 16a, or 16b, and that received from any one contributor, during the year, total contributions of the greater of (1) \$5,000; or (2) 2% of the amount on (i) Form 990, Part VIII, line 1h; or (ii) Form 990-EZ, line 1. Complete Parts I and II.
- For an organization described in section 501(c)(7), (8), or (10) filing Form 990 or 990-EZ that received from any one contributor, during the year, total contributions of more than \$1,000 *exclusively* for religious, charitable, scientific, literary, or educational purposes, or for the prevention of cruelty to children or animals. Complete Parts I, II, and III.
- For an organization described in section 501(c)(7), (8), or (10) filing Form 990 or 990-EZ that received from any one contributor, during the year, contributions *exclusively* for religious, charitable, etc., purposes, but no such contributions totaled more than \$1,000. If this box is checked, enter here the total contributions that were received during the year for an *exclusively* religious, charitable, etc., purpose. Don't complete any of the parts unless the **General Rule** applies to this organization because it received *nonexclusively* religious, charitable, etc., contributions totaling \$5,000 or more during the year ▶ \$ _____

Caution: An organization that isn't covered by the General Rule and/or the Special Rules doesn't file Schedule B (Form 990, 990-EZ, or 990-PF), but it **must** answer "No" on Part IV, line 2, of its Form 990; or check the box on line H of its Form 990-EZ or on its Form 990-PF, Part I, line 2, to certify that it doesn't meet the filing requirements of Schedule B (Form 990, 990-EZ, or 990-PF).

Name of organization Rare Species Conservatory Foundation	Employer identification number 65-0560456
--	--

Part I Contributors (see instructions). Use duplicate copies of Part I if additional space is needed.

(a) No.	(b) Name, address, and ZIP + 4	(c) Total contributions	(d) Type of contribution
1	Papergraphics International 14 Celina Ave, Unit 3 Nashua NH 03063	\$ 6,000.	Person <input checked="" type="checkbox"/> Payroll <input type="checkbox"/> Noncash <input type="checkbox"/> (Complete Part II for noncash contributions.)
2	Rasmussen Family Foundation 1800 Red Mountain Drive Santa Clara UT 84765	\$ 35,000.	Person <input checked="" type="checkbox"/> Payroll <input type="checkbox"/> Noncash <input type="checkbox"/> (Complete Part II for noncash contributions.)
3	Cathy Lee Hall 2043 Princeton Avenue Saint Paul MN 55105	\$ 6,000.	Person <input checked="" type="checkbox"/> Payroll <input type="checkbox"/> Noncash <input type="checkbox"/> (Complete Part II for noncash contributions.)
4	Terry Root 7910 Kennedy Lane Sarasota FL 34240	\$ 25,000.	Person <input checked="" type="checkbox"/> Payroll <input type="checkbox"/> Noncash <input type="checkbox"/> (Complete Part II for noncash contributions.)
5	Fox Benton 8818 Stable Crest Blvd Houston TX 77024	\$ 50,500.	Person <input checked="" type="checkbox"/> Payroll <input type="checkbox"/> Noncash <input type="checkbox"/> (Complete Part II for noncash contributions.)
6	Hufty Foundation 580 Village Blvd, Suite 110 West Palm Beach FL 33409	\$ 12,000.	Person <input checked="" type="checkbox"/> Payroll <input type="checkbox"/> Noncash <input type="checkbox"/> (Complete Part II for noncash contributions.)

Name of organization Rare Species Conservatory Foundation	Employer identification number 65-0560456
---	---

Part I **Contributors** (see instructions). Use duplicate copies of Part I if additional space is needed.

(a) No.	(b) Name, address, and ZIP + 4	(c) Total contributions	(d) Type of contribution
7	American Endowment Foundation 5700 Darrow Road, Suite 118 Hudson OH 44236	\$ 30,000.	Person <input checked="" type="checkbox"/> Payroll <input type="checkbox"/> Noncash <input type="checkbox"/> (Complete Part II for noncash contributions.)
8	A.B.R. 5900 Lagorce Drive Miami Beach FL 33140	\$ 5,000.	Person <input checked="" type="checkbox"/> Payroll <input type="checkbox"/> Noncash <input type="checkbox"/> (Complete Part II for noncash contributions.)
9	FIU Foundation MARC 5th Floor, 11200 SW 8th Street Atlanta GA 30345	\$ 300,000.	Person <input checked="" type="checkbox"/> Payroll <input type="checkbox"/> Noncash <input type="checkbox"/> (Complete Part II for noncash contributions.)
10	FIU MARC 5th Floor, 11200 SW 8th Street Atlanta GA 30345	\$ 30,000.	Person <input checked="" type="checkbox"/> Payroll <input type="checkbox"/> Noncash <input type="checkbox"/> (Complete Part II for noncash contributions.)
11	The Miami Foundation 200 South Biscayne Blvd, Suite 505 Miami FL 33131	\$ 100,000.	Person <input checked="" type="checkbox"/> Payroll <input type="checkbox"/> Noncash <input type="checkbox"/> (Complete Part II for noncash contributions.)
12	U.S. Fish and Wildlife Service 1875 Century Blvd, Suite 310 Atlanta GA 30345	\$ 114,403.	Person <input checked="" type="checkbox"/> Payroll <input type="checkbox"/> Noncash <input type="checkbox"/> (Complete Part II for noncash contributions.)

Name of organization <u>Rare Species Conservatory Foundation</u>	Employer identification number <u>65-0560456</u>
---	---

Part II **Noncash Property** (see instructions). Use duplicate copies of Part II if additional space is needed.

(a) No. from Part I	(b) Description of noncash property given	(c) FMV (or estimate) (See instructions.)	(d) Date received
-----	----- ----- ----- -----	\$ -----	-----
-----	----- ----- ----- -----	\$ -----	-----
-----	----- ----- ----- -----	\$ -----	-----
-----	----- ----- ----- -----	\$ -----	-----
-----	----- ----- ----- -----	\$ -----	-----
-----	----- ----- ----- -----	\$ -----	-----
-----	----- ----- ----- -----	\$ -----	-----

Name of organization Rare Species Conservatory Foundation	Employer identification number 65-0560456
--	--

Part III Exclusively religious, charitable, etc., contributions to organizations described in section 501(c)(7), (8), or (10) that total more than \$1,000 for the year from any one contributor. Complete columns (a) through (e) and the following line entry. For organizations completing Part III, enter the total of *exclusively* religious, charitable, etc., contributions of \$1,000 or less for the year. (Enter this information once. See instructions.) ▶ \$ _____

Use duplicate copies of Part III if additional space is needed.

(a) No. from Part I	(b) Purpose of gift	(c) Use of gift	(d) Description of how gift is held
-----	----- ----- -----	----- ----- -----	----- ----- -----
(e) Transfer of gift			
Transferee's name, address, and ZIP + 4		Relationship of transferor to transferee	
----- ----- -----		----- ----- -----	
(a) No. from Part I	(b) Purpose of gift	(c) Use of gift	(d) Description of how gift is held
-----	----- ----- -----	----- ----- -----	----- ----- -----
(e) Transfer of gift			
Transferee's name, address, and ZIP + 4		Relationship of transferor to transferee	
----- ----- -----		----- ----- -----	
(a) No. from Part I	(b) Purpose of gift	(c) Use of gift	(d) Description of how gift is held
-----	----- ----- -----	----- ----- -----	----- ----- -----
(e) Transfer of gift			
Transferee's name, address, and ZIP + 4		Relationship of transferor to transferee	
----- ----- -----		----- ----- -----	
(a) No. from Part I	(b) Purpose of gift	(c) Use of gift	(d) Description of how gift is held
-----	----- ----- -----	----- ----- -----	----- ----- -----
(e) Transfer of gift			
Transferee's name, address, and ZIP + 4		Relationship of transferor to transferee	
----- ----- -----		----- ----- -----	

Supplemental Financial Statements

2017

Open to Public Inspection

Department of the Treasury Internal Revenue Service

Complete if the organization answered "Yes" on Form 990, Part IV, line 6, 7, 8, 9, 10, 11a, 11b, 11c, 11d, 11e, 11f, 12a, or 12b.

Attach to Form 990.

Go to www.irs.gov/Form990 for instructions and the latest information.

Name of the organization: Rare Species Conservatory Foundation; Employer identification number: 65-0560456

Part I Organizations Maintaining Donor Advised Funds or Other Similar Funds or Accounts.

Complete if the organization answered "Yes" on Form 990, Part IV, line 6.

Table with 2 columns: (a) Donor advised funds, (b) Funds and other accounts. Rows include total number at end of year, aggregate values, and questions about donor advisement.

Part II Conservation Easements.

Complete if the organization answered "Yes" on Form 990, Part IV, line 7.

Table with 2 columns: Held at the End of the Tax Year. Rows include purpose of easements, number of easements, and monitoring details.

Part III Organizations Maintaining Collections of Art, Historical Treasures, or Other Similar Assets.

Complete if the organization answered "Yes" on Form 990, Part IV, line 8.

Table with 2 columns: Revenue, Assets. Rows include questions about reporting collections of art and historical treasures.

Part III Organizations Maintaining Collections of Art, Historical Treasures, or Other Similar Assets (continued)

- 3** Using the organization's acquisition, accession, and other records, check any of the following that are a significant use of its collection items (check all that apply):
- a** Public exhibition
 - b** Scholarly research
 - c** Preservation for future generations
 - d** Loan or exchange programs
 - e** Other _____
- 4** Provide a description of the organization's collections and explain how they further the organization's exempt purpose in Part XIII.
- 5** During the year, did the organization solicit or receive donations of art, historical treasures, or other similar assets to be sold to raise funds rather than to be maintained as part of the organization's collection? . . . Yes No

Part IV Escrow and Custodial Arrangements.

Complete if the organization answered "Yes" on Form 990, Part IV, line 9, or reported an amount on Form 990, Part X, line 21.

- 1a** Is the organization an agent, trustee, custodian or other intermediary for contributions or other assets not included on Form 990, Part X? . . . Yes No
- b** If "Yes," explain the arrangement in Part XIII and complete the following table:
- | | Amount |
|---|--------|
| 1c Beginning balance | |
| 1d Additions during the year | |
| 1e Distributions during the year | |
| 1f Ending balance | |
- 2a** Did the organization include an amount on Form 990, Part X, line 21, for escrow or custodial account liability? Yes No
- b** If "Yes," explain the arrangement in Part XIII. Check here if the explanation has been provided on Part XIII . . .

Part V Endowment Funds.

Complete if the organization answered "Yes" on Form 990, Part IV, line 10.

- | | (a) Current year | (b) Prior year | (c) Two years back | (d) Three years back | (e) Four years back |
|---|------------------|----------------|--------------------|----------------------|---------------------|
| 1a Beginning of year balance | | | | | |
| b Contributions | | | | | |
| c Net investment earnings, gains, and losses | | | | | |
| d Grants or scholarships | | | | | |
| e Other expenditures for facilities and programs | | | | | |
| f Administrative expenses | | | | | |
| g End of year balance | | | | | |
- 2** Provide the estimated percentage of the current year end balance (line 1g, column (a)) held as:
- a** Board designated or quasi-endowment ▶ _____ %
 - b** Permanent endowment ▶ _____ %
 - c** Temporarily restricted endowment ▶ _____ %
- The percentages on lines 2a, 2b, and 2c should equal 100%.
- 3a** Are there endowment funds not in the possession of the organization that are held and administered for the organization by:
- | | Yes | No |
|--|---------------|----|
| (i) unrelated organizations | 3a(i) | |
| (ii) related organizations | 3a(ii) | |
- b** If "Yes" on line 3a(ii), are the related organizations listed as required on Schedule R? . . . **3b**
- 4** Describe in Part XIII the intended uses of the organization's endowment funds.

Part VI Land, Buildings, and Equipment.

Complete if the organization answered "Yes" on Form 990, Part IV, line 11a. See Form 990, Part X, line 10.

Description of property	(a) Cost or other basis (investment)	(b) Cost or other basis (other)	(c) Accumulated depreciation	(d) Book value
1a Land		905,208.		905,208.
b Buildings		15,000.	11,170.	3,830.
c Leasehold improvements				
d Equipment		68,853.	63,197.	5,656.
e Other		7,575.	7,575.	0.
Total. Add lines 1a through 1e. (Column (d) must equal Form 990, Part X, column (B), line 10c.)				914,694.

Part VII Investments—Other Securities.

Complete if the organization answered "Yes" on Form 990, Part IV, line 11b. See Form 990, Part X, line 12.

(a) Description of security or category (including name of security)	(b) Book value	(c) Method of valuation: Cost or end-of-year market value
(1) Financial derivatives		
(2) Closely-held equity interests		
(3) Other		
(A) -----		
(B) -----		
(C) -----		
(D) -----		
(E) -----		
(F) -----		
(G) -----		
(H) -----		
Total. (Column (b) must equal Form 990, Part X, col. (B) line 12.) ▶		

Part VIII Investments—Program Related.

Complete if the organization answered "Yes" on Form 990, Part IV, line 11c. See Form 990, Part X, line 13.

(a) Description of investment	(b) Book value	(c) Method of valuation: Cost or end-of-year market value
(1)		
(2)		
(3)		
(4)		
(5)		
(6)		
(7)		
(8)		
(9)		
Total. (Column (b) must equal Form 990, Part X, col. (B) line 13.) ▶		

Part IX Other Assets.

Complete if the organization answered "Yes" on Form 990, Part IV, line 11d. See Form 990, Part X, line 15.

(a) Description	(b) Book value
(1)	
(2)	
(3)	
(4)	
(5)	
(6)	
(7)	
(8)	
(9)	
Total. (Column (b) must equal Form 990, Part X, col. (B) line 15.) ▶	

Part X Other Liabilities.

Complete if the organization answered "Yes" on Form 990, Part IV, line 11e or 11f. See Form 990, Part X, line 25.

1.	(a) Description of liability	(b) Book value	
	(1) Federal income taxes		
	(2) Payroll Taxes Payable	5,171.	
	(3)		
	(4)		
	(5)		
	(6)		
	(7)		
	(8)		
	(9)		
Total. (Column (b) must equal Form 990, Part X, col. (B) line 25.) ▶		5,171.	

2. Liability for uncertain tax positions. In Part XIII, provide the text of the footnote to the organization's financial statements that reports the organization's liability for uncertain tax positions under FIN 48 (ASC 740). Check here if the text of the footnote has been provided in Part XIII

Part XI Reconciliation of Revenue per Audited Financial Statements With Revenue per Return.

Complete if the organization answered "Yes" on Form 990, Part IV, line 12a.

1	Total revenue, gains, and other support per audited financial statements		1
2	Amounts included on line 1 but not on Form 990, Part VIII, line 12:		
a	Net unrealized gains (losses) on investments	2a	
b	Donated services and use of facilities	2b	
c	Recoveries of prior year grants	2c	
d	Other (Describe in Part XIII.)	2d	
e	Add lines 2a through 2d		2e
3	Subtract line 2e from line 1		3
4	Amounts included on Form 990, Part VIII, line 12, but not on line 1:		
a	Investment expenses not included on Form 990, Part VIII, line 7b	4a	
b	Other (Describe in Part XIII.)	4b	
c	Add lines 4a and 4b		4c
5	Total revenue. Add lines 3 and 4c . (This must equal Form 990, Part I, line 12.)		5

Part XII Reconciliation of Expenses per Audited Financial Statements With Expenses per Return.

Complete if the organization answered "Yes" on Form 990, Part IV, line 12a.

1	Total expenses and losses per audited financial statements		1
2	Amounts included on line 1 but not on Form 990, Part IX, line 25:		
a	Donated services and use of facilities	2a	
b	Prior year adjustments	2b	
c	Other losses	2c	
d	Other (Describe in Part XIII.)	2d	
e	Add lines 2a through 2d		2e
3	Subtract line 2e from line 1		3
4	Amounts included on Form 990, Part IX, line 25, but not on line 1:		
a	Investment expenses not included on Form 990, Part VIII, line 7b	4a	
b	Other (Describe in Part XIII.)	4b	
c	Add lines 4a and 4b		4c
5	Total expenses. Add lines 3 and 4c . (This must equal Form 990, Part I, line 18.)		5

Part XIII Supplemental Information.

Provide the descriptions required for Part II, lines 3, 5, and 9; Part III, lines 1a and 4; Part IV, lines 1b and 2b; Part V, line 4; Part X, line 2; Part XI, lines 2d and 4b; and Part XII, lines 2d and 4b. Also complete this part to provide any additional information.

**SCHEDULE F
(Form 990)**

Statement of Activities Outside the United States

OMB No. 1545-0047

2017

Open to Public Inspection

▶ Complete if the organization answered "Yes" on Form 990, Part IV, line 14b, 15, or 16.

▶ Attach to Form 990.

▶ Go to www.irs.gov/Form990 for instructions and the latest information.

Department of the Treasury
Internal Revenue Service

Name of the organization

Rare Species Conservatory Foundation

Employer identification number

65-0560456

Part I General Information on Activities Outside the United States. Complete if the organization answered "Yes" on Form 990, Part IV, line 14b.

1 For grantmakers. Does the organization maintain records to substantiate the amount of its grants and other assistance, the grantees' eligibility for the grants or assistance, and the selection criteria used to award the grants or assistance? Yes No

2 For grantmakers. Describe in Part V the organization's procedures for monitoring the use of its grants and other assistance outside the United States.

3 Activities per Region. (The following Part I, line 3 table can be duplicated if additional space is needed.)

(a) Region	(b) Number of offices in the region	(c) Number of employees, agents, and independent contractors in the region	(d) Activities conducted in the region (by type) (such as, fundraising, program services, investments, grants to recipients located in the region)	(e) If activity listed in (d) is a program service, describe specific type of service(s) in the region	(f) Total expenditures for and investments in the region
(1) Central America	0	0	Program Service	See Schedule F - Part V	45,757.
(2) Sub-Saharan Africa	0	0	Program Service	See Schedule F- Part V	145,823.
(3)					
(4)					
(5)					
(6)					
(7)					
(8)					
(9)					
(10)					
(11)					
(12)					
(13)					
(14)					
(15)					
(16)					
(17)					
3a Sub-total	0	0			191,580.
b Total from continuation sheets to Part I					
c Totals (add lines 3a and 3b)	0	0			191,580.

Part II Grants and Other Assistance to Organizations or Entities Outside the United States. Complete if the organization answered "Yes" on Form 990, Part IV, line 15, for any recipient who received more than \$5,000. Part II can be duplicated if additional space is needed.

1	(a) Name of organization	(b) IRS code section and EIN (if applicable)	(c) Region	(d) Purpose of grant	(e) Amount of cash grant	(f) Manner of cash disbursement	(g) Amount of noncash assistance	(h) Description of noncash assistance	(i) Method of valuation (book, FMV, appraisal, other)
(1)			Central America	Wildlife Research	45,757.	Wire/Check			
(2)			Sub-Saharan Africa	Wildlife Cons	145,823.	Wire/Check			
(3)									
(4)									
(5)									
(6)									
(7)									
(8)									
(9)									
(10)									
(11)									
(12)									
(13)									
(14)									
(15)									
(16)									

2 Enter total number of recipient organizations listed above that are recognized as charities by the foreign country, recognized as tax-exempt by the IRS, or for which the grantee or counsel has provided a section 501(c)(3) equivalency letter **2**

3 Enter total number of other organizations or entities **2**

Part III Grants and Other Assistance to Individuals Outside the United States. Complete if the organization answered "Yes" on Form 990, Part IV, line 16. Part III can be duplicated if additional space is needed.

(a) Type of grant or assistance	(b) Region	(c) Number of recipients	(d) Amount of cash grant	(e) Manner of cash disbursement	(f) Amount of noncash assistance	(g) Description of noncash assistance	(h) Method of valuation (book, FMV, appraisal, other)
(1)							
(2)							
(3)							
(4)							
(5)							
(6)							
(7)							
(8)							
(9)							
(10)							
(11)							
(12)							
(13)							
(14)							
(15)							
(16)							
(17)							
(18)							

Part IV Foreign Forms

- 1 Was the organization a U.S. transferor of property to a foreign corporation during the tax year? *If "Yes," the organization may be required to file Form 926, Return by a U.S. Transferor of Property to a Foreign Corporation (see Instructions for Form 926)* Yes No

- 2 Did the organization have an interest in a foreign trust during the tax year? *If "Yes," the organization may be required to separately file Form 3520, Annual Return To Report Transactions With Foreign Trusts and Receipt of Certain Foreign Gifts, and/or Form 3520-A, Annual Information Return of Foreign Trust With a U.S. Owner (see Instructions for Forms 3520 and 3520-A; don't file with Form 990)* Yes No

- 3 Did the organization have an ownership interest in a foreign corporation during the tax year? *If "Yes," the organization may be required to file Form 5471, Information Return of U.S. Persons With Respect To Certain Foreign Corporations (see Instructions for Form 5471)* Yes No

- 4 Was the organization a direct or indirect shareholder of a passive foreign investment company or a qualified electing fund during the tax year? *If "Yes," the organization may be required to file Form 8621, Information Return by a Shareholder of a Passive Foreign Investment Company or Qualified Electing Fund (see Instructions for Form 8621)*. Yes No

- 5 Did the organization have an ownership interest in a foreign partnership during the tax year? *If "Yes," the organization may be required to file Form 8865, Return of U.S. Persons With Respect to Certain Foreign Partnerships (see Instructions for Form 8865)* Yes No

- 6 Did the organization have any operations in or related to any boycotting countries during the tax year? *If "Yes," the organization may be required to separately file Form 5713, International Boycott Report (see Instructions for Form 5713; don't file with Form 990)* Yes No

Part V **Supplemental Information**

Provide the information required by Part I, line 2 (monitoring of funds); Part I, line 3, column (f) (accounting method; amounts of investments vs. expenditures per region); Part II, line 1 (accounting method); Part III (accounting method); and Part III, column (c) (estimated number of recipients), as applicable. Also complete this part to provide any additional information. See instructions.

See Statement

Dotted lines for supplemental information.

Schedule F: Statement of Activities Outside U.S.

Part V: Supplemental Information

Continuation Statement

Pt I Line 2	Grant Monitoring: All grants are required to have a detailed budget, expense tracking along with interim and follow-up reports, in addition to reporting requirements by the original granting agency.
-------------	--

**SCHEDULE O
(Form 990 or 990-EZ)**

Department of the Treasury
Internal Revenue Service

Supplemental Information to Form 990 or 990-EZ

Complete to provide information for responses to specific questions on
Form 990 or 990-EZ or to provide any additional information.

▶ Attach to Form 990 or 990-EZ.
▶ Go to www.irs.gov/Form990 for the latest information.

OMB No. 1545-0047

2017

**Open to Public
Inspection**

Name of the organization Rare Species Conservatory Foundation	Employer identification number 65-0560456
--	--

Pt VI, Line 11b: A copy of the 990 is provided to the Directors before filing.
The 990 with backup is prepared with and reviewed by a tax accounting professional
and sent back to RSCF for corrections. After all corrections are made and the
return is reviewed by the accountant, a clean copy is prepared for signing and
PDF format, and distributed to the directors for approval. The final copy is
signed, updated to PDF for redistribution to the directors, and filed with the
IRS.

Pt VI, Line 12c: Conflict of Interest Policy: See schedule O - Attachment

Pt VI, Line 19: Whistleblower Protection Policy: See Schedule O - See Attachment

2017 990 Misc. responses:

Schedule F, Parts I and II

Central America/Caribbean (\$45,757 total):

Dominica:

- \$2000 (wire transfer) for sponsorship of Caribbean Endemic Birds Festival
- \$29,630 (wire transfer) for purchase of a new 4WD, diesel, double-cab Forestry truck
- \$2194 (check) for sponsorship of Dominican Forestry delegates to Birds Caribbean regional meeting
- \$11,933 (direct expenses by Reillo via credit card, cash and checks, year-round) to provide Dominica's Forestry, Wildlife and Parks Division supplies, equipment, field gear, and maintenance/cleanup materials for the Parrot Conservation and Research Program and post-hurricane-Maria emergency supplies, materials and equipment. Material support is part of RSCF's longstanding conservation-program collaboration with Dominica's Forestry, Wildlife and Parks Division.

Belize:

- \$246 provided to Friends of Conservation and Development, Belize, for hand-feeding formula to save scarlet macaw chicks (*Ara macao cyanooptera*).

Sub-Saharan Africa (\$145,823 total)

Kenya: \$50,000 (via wire transfer) to Rhino Ark Charitable Trust for field operations, wildlife protection and surveillance, and community outreach under the Bongo Surveillance Programme (BSP). The bongo program includes species recovery planning and implementation, bongo antelope population management, field monitoring, community education and awareness, wildlife clubs, antelope surveillance, population surveys, and data/sample collection. All field bongo research is coordinated between the Bongo Surveillance Programme, Rhino Ark Charitable Trust and the Kenya Wildlife Service.

Cote d'Ivoire: \$65,823, including **\$41,450** (wire transfer) and **\$24,373** (via check and credit card purchases) disbursed to continue project entitled "*In- and Ex-Situ Conservation of the West-African, Slender-snouted Crocodile Mecistops in the Upper Guinea Forest Region*". See project description in *Part III, Statement of Program Service Accomplishments* for specifics. Project is implemented *in situ* by Research Associate Dr. Matthew Shirley in collaboration with the Abidjan National Zoo and the Ivorian national parks service (OIPR). Afrique Nature, an Ivorian NGO, serves as in-country fiduciary for receipt of funds granted to RSCF for project implementation. Expenses include field-research running costs, field equipment and gear (e.g., telemetry equipment, packs, boots, and essential field gear), disposable supplies and local/international travel. Research and conservation activities were carried out in Cote d'Ivoire, Ghana, and Benin during the year 2017. In Cote d'Ivoire, nationwide surveys were continued with work in two national parks, one community reserve, and four classified forests. These

surveys will further facilitate the development of distribution and habitat suitability models for the slender-snouted crocodile, as well as inform reintroduction and conservation planning.

University College Dublin is the primary partner implementing laboratory work using environmental (e)DNA to monitor Critically Endangered slender-snouted crocodile and Endangered pygmy hippo populations in Cote d'Ivoire. **Funds wire transferred to UCD in the amount of \$16,450** were spent on travel costs from Ireland to Cote d'Ivoire for field sampling, as well as reagents and laboratory consumables for developing and testing the primer and probe eDNA assays. The remaining funds (\$9,232.33) will be expended in 2018 refining the assay and analyzing field samples.

Madagascar: \$30,000 (wire transfer). Project-restricted funds wired from RSCF to in-country program fiduciary MICET on behalf of RSCF's collaboration with the Lemur Conservation Foundation. Dr. Erik Patel, LCF's Program Director and Research Associate with FIU's Tropical Conservation Institute, leads *in situ* lemur research, community conservation outreach, sustainable livelihood projects, and a multitude of hands-on, grass-roots efforts to protect and conserve endangered lemurs and their habitats. Funds were expended to support direct, on-the-ground, project costs and engage essential, local personnel in project implementation. See Madagascar program description in *Part III, Statement of Program Service Accomplishments*.

Schedule O:

Part VI Line 12c:

Conflict of Interest Policy. RSCF Directors are requested to disclose any conflict of interest annually. Any and all potential conflicts must be disclosed via signed letter monitored by each program's director and/or RSCF's President. Such disclosure, by notice in writing, shall be made by any and all interested parties to RSCF's full Board of Directors in all conflicts of interest including, but not limited to, the following:

- A board member's relationship to other members
- If a board member or his/her organization or financial interest stands to benefit from any RSCF transaction
- A board member's organization and/or financial interest receives RSCF grant funds
- A board member or staff member is part of the governing body of any contributor to the RSCF
- A board member in any way influences, or attempts to influence, any contributor to the RSCF

Part VI, Line 19:

Whistleblower Protection Policy, Rare Species Conservatory Foundation, Inc. (RSCF):

A. Application. This Whistleblower Protection Policy applies to all of the RSCF's staff, whether full-time, part-time, or temporary employees, to all volunteers, to all who provide contract services, and to all officers and directors, each of whom shall be entitled to protection.

B. Reporting Credible Information. A protected person shall be encouraged to report information relating to illegal practices or violations of policies of RSCF (a "Violation") that such person in good faith has reasonable cause to believe is credible. Information shall be reported to RSCF's President (As Compliance Officer), unless the report relates to the President, in which case the report shall be made to any officer or director of RSCF's Board of Directors, or RSCF's Curator, whom shall be responsible to provide an alternative procedure. Anyone reporting a Violation must act in good faith, and have reasonable grounds for believing that the information shared in the report indicates that a Violation has occurred.

C. Investigating Information. The Compliance Officer shall promptly investigate each such report and prepare a written report to the Board of Directors. In connection with such investigation all persons entitled to protection shall provide the Compliance Officer with credible information. All actions of the Compliance Officer in receiving and investigating the report and additional information shall endeavor to protect the confidentiality of all persons entitled to protection.

D. Confidentiality. RSCF encourages anyone reporting a Violation to identify himself or herself when making a report in order to facilitate the investigation of the Violation. However, reports may be submitted anonymously by filing a written complaint by e-mail (info@rarespecies.org) or regular mail, addressed to the RSCF Board of Directors or President. Reports of Violations or suspected Violations will be kept confidential to the extent possible, with the understanding that confidentiality may not be maintained where identification is required by law or in order to enable RSCF or law enforcement to conduct an adequate investigation.

E. Protection from Retaliation. No person entitled to protection shall be subjected to retaliation, intimidation, harassment, or other adverse action for reporting information in accordance with this Policy. Any person entitled to protection who believes that he or she is the subject of any form of retaliation for such participation should immediately report the same as a violation of and in accordance with this Policy. Any individual within the Organization who retaliates against another individual who has reported a Violation in good faith or who, in good faith, has cooperated in the investigation of a Violation is subject to discipline, including termination of employment or volunteer status.

F. Dissemination and Implementation of Policy. This Policy shall be available and disseminated in writing to all affected constituencies. RSCF shall adopt procedures for implementation of this Policy, which may include, but are not limited to, the following:

- (1) documenting reported Violations;
- (2) working with legal counsel to decide whether the reported Violation requires review by the Compliance Officer or should be directed to another person or department;
- (3) keeping RSCF's board of directors informed of the progress of the investigation;
- (4) interviewing employees;
- (5) requesting and reviewing relevant documents, and/or requesting that an auditor or counsel investigate the complaint; and
- (6) preparing a written record of the reported violation and its disposition, to be retained for a specified period of time.

The procedures for implementation of this Policy shall include a process for communicating with a complainant about the status of the complaint, to the extent that the complainant's identity is disclosed, and to the extent consistent with any privacy or confidentiality limitations.

RARE SPECIES CONSERVATORY FOUNDATION, INC.

EIN: 65-0560456

FORM: 990

TAX YEAR: 2017

PART III: STATEMENT OF PROGRAM SERVICE ACCOMPLISHMENTS

Mission and Scope: RSCF is a 501(c)(3), non-profit organization dedicated to preserving biodiversity through hands-on conservation programs rooted in sound science. RSCF employs the "flagship species" concept to identify and conserve high profile, priority species in order to leverage protection for the ecosystems they represent. Flagship species breeding and conservation efforts, along with field-based research, habitat protection and local capacity building, are directed toward long-term, regional-scale biodiversity preservation. RSCF designs sustainable recovery, reintroduction and protection programs for endangered species in the wild, and works collaboratively with governments and other conservation/research organizations to restore target species and protect critical habitats. RSCF also provides consulting and technical services to conservation teams, and forms educational, political and economic partnerships to expedite specific habitat and species conservation projects.

Please also see detailed descriptions of program activities at www.rarespecies.org.

I. 2017 Wildlife breeding and research activities

The Red-browed Amazon parrot: The endangered Amazon parrot *Amazona rhodocorytha* is a top priority for long-term captive breeding and management, from which a sustainable, *in situ* recovery effort is evolving. RSCF holds the only known breeding group in North America. The captive effort serves as a program platform to facilitate global management of the species and *in situ* conservation investment in Brazil. The Red-brow is a parrot of highest conservation priority, as identified in the 2000-2001 Status Survey and Conservation Action Plan for Parrots, published in 2000 by the IUCN (World Conservation Union) in coordination with the World Parrot Trust. In conjunction with IBAMA/ICMBIO (the Brazilian government wildlife authority), RSCF and partnering NGO's (Zoo Curitiba, Ideia Ambiental, Associação de Pesquisa e Conservação da Vida Silvestre, Fundação Neotrópica do Brasil) seek to assess the distribution, ecology and status of the species throughout its range, repatriate confiscated *in situ* and captive-bred *ex situ* Red-brows, and transfer title for all *ex situ* Red-brows to the Brazilian government in recognition of Brazil's governing authority and progressive conservation and law enforcement efforts. RSCF aims to return a core population of Red-brows to Brazil as necessary to complement an existing breeding-and-rehabilitation program. During 2017, RSCF Director Reillo continued communications with Pedro Scherer Neto, point person for the Red-brow effort in Curitiba, Brazil. Program development during 2017 included continuation of on- and off-exhibit aviaries at Tampa's Lowry Park Zoo. The Zoo is engaging in a progressive collaboration with RSCF on behalf of Red-brows, helping manage the North American population, promoting staff development, conservation education and outreach, and helping to update the studbook initiated by Reillo 20 years ago. In 2014, this partnership sponsored a grant to Fundação Neotrópica do Brasil entitled, "Distribution, Ecology and Conservation Status of the Red-browed Parrot *Amazona rhodocorytha* in the State of Minas Gerais, Brazil (*see Conservation and Research Program Field Projects, below*)." In addition, a modest grant from The Batchelor Foundation enabled RSCF to compile an historical, video mini-documentary of the Red-brow recovery effort, released mid-2015 (Black Door Films, Inc.). Ultimately, the RSCF-TLPZ-Brazil collaboration will coordinate husbandry and captive-breeding methods, prepare field recovery strategies, and implement international governmental regulations to thwart trade in the species and reinforce species-level authority and sovereignty by the Brazilian government. During 2015, after 23 years of artificially incubating and hand-rearing all Red-brow offspring at the Conservatory, RSCF allowed breeding Red-brow pairs to naturally incubate and rear their young. Five additional Red-brows were added to the flock in 2017.

The white-bellied Caique parrot: RSCF's 2017 on-site population of *Pionites leucogaster xanthomeria* totaled six breeding pairs. In 1999, RSCF concluded the longest running (10 years) and most successful breeding and research

program on the white-bellied caique parrot. After compiling five years of reproductive and genetic data from a founder breeding population into a husbandry manual and population management system, RSCF developed the breeding protocol for this species, which is now used in aviculture worldwide. In 2000, RSCF's focus turned to placing the remaining genetically important stock with zoological institutions in the U.S. and the Graeme Hall Nature Sanctuary in Barbados (birds delivered in early 2001), and continuing to support the genetic and husbandry database. During 2001, RSCF completed the reduction of the Conservatory's white-belly inventory, with the remaining birds to be maintained indefinitely at the Loxahatchee facility. Since early 2002, *Pionites* will only be reproduced by special request from wildlife parks, accredited aviaries, or avicultural centers.

The East African Bongo: One of the most spectacular mammals bred at the Conservatory is the Mountain (or East African) Bongo, a large antelope facing extinction in the wild. The vegetation and climate at the Conservatory have proven ideal for propagating and researching this shy, forest-dwelling bovid. In 2003, RSCF commenced an inter-institutional project with the U.N. Foundation and U.N. Development Programme to establish an *in situ* breeding program for bongo in Kenya at the Mt. Kenya Wildlife Conservancy. Entitled ***Repatriation of Mountain Bongo Antelope to Mt. Kenya World Heritage Site***, this initiative represents the successful completion of the first of several conservation steps needed to reestablish a self-sustaining, wild population of bongo on Mt. Kenya and in the Aberdares and surrounding ecosystems, and stimulate a broad base of conservation program support for the Mt. Kenya World Heritage Site and Aberdares National Park and Conservation Area—both global-priority biodiversity areas.

RSCF coordinated the project as an NGO contractor to UNDP, was consignor for the bongo export (receiving legal title to all animals donated to the project and repatriated to Kenya), and also donated four bongo from the RSCF population to the effort. In 2009, RSCF Research Associate Lyndon Estes completed his Ph.D. at the University of Virginia, focusing on the ecology and habitat utilization of wild bongo in the Aberdares. This research complements other recovery efforts, both *ex situ* and *in situ*, by helping to identify appropriate habitat for sustainable reintroduction, train local guides and researchers, and bolster monitoring and protection of the remaining wild bongo population. Along with the United Nations Development Programme (Small Grants Programme) and partnering NGO's, RSCF helps sponsor the Aberdares bongo surveillance effort (BSP—Bongo Surveillance Programme, www.mountainbongo.org), coordinated with the local NGO Rhino Ark (www.rhinoark.org). On the *in situ* captive front, RSCF has provided technical and veterinary services to the Mt. Kenya Wildlife Conservancy and helped sponsor general husbandry and animal care for the repatriated bongo group. During 2007, RSCF completed formal collaborations with Dr. Michael Bruford, University of Cardiff, Wales, to genetically assess the wild Aberdares and Mt. Kenya populations via mtDNA and microsatellite analyses of field-collected dung samples. This program confirmed species identities and haplotype variation in wild populations, as it also trained a Kenyan graduate student in molecular genetics laboratory methodology. Co-sponsored by Rhino Ark, this trained technician has brought state-of-the-art molecular laboratory techniques and expertise back to Kenya. In addition to corroborating field teams' detection of bongo presence in the field, the analyses produced a microsatellite protocol (using bovid markers) for discriminating individual bongo genotypes from bongo dung. During 2007 RSCF donated an ELISA fluorimeter to Analabs, Ltd. (Nairobi) to assist in the isolation and identification of bovine infectious diseases that impact both wild and agricultural bovine populations. Early detection and intervention is critical to thwart periodic outbreaks of *Theileriosis*, rinderpest, hoof-and-mouth disease, and other viral and parasite-borne infections that cross between domestic and wild bovinds.

A detailed summary of research findings and management recommendations can be found at www.rarespecies.org in the document entitled "Mountain Bongo Research Summary", compiled by former Research Associate Lyndon Estes. Current program expansion includes enhancing surveillance capacity for the BSP, providing direct support for the Bongo Program Coordinator and field staff within Rhino Ark, ongoing surveillance, monitoring and population assessment throughout the bongo's range, and continuing a comprehensive genetic assessment of all living bongo. Program partners, including the Center for Conservation of Tropical Ungulates (CCTU), White Oak Conservation Center and European EEP institutions, have pledged direct and in-kind support for capacity building, field logistics, and tangible conservation implementation in the Aberdares and on Mt. Kenya. During 2017, RSCF transferred \$50,000 to the Rhino Ark Charitable Trust for ongoing BSP surveillance, protection and research activities in the

field, largely with support from a new program partner, The Texas Antelope Conservancy in Houston. During 2017, RSCF hosted a delegation from Kenya, including the new owner of the Mt. Kenya Wildlife Conservancy, Mr. Humphrey Kariuki, Dr. Mark Davis and Dr. George Amato, to discuss facility expansion at MKWC, husbandry and population management improvements and means to fully implement Bongo Task Force's recommendations for sustainable bongo recovery as presented in the 2016-2017 Action Plan. The session was very productive, and RSCF and partners look forward to coordinating all next steps at MKWC with the new management, with concurrent program expansion under the BSP to conserve all wild populations.

Florida Bongo Ranching Program: During 2017, RSCF continued coordinating the Florida-based bongo management consortium among three key facilities— RSCF, the Micanopy Zoological Preserve and CCTU— to help maintain a healthy *ex situ* bongo population and provide animals for repatriation and reintroduction in Kenya as necessary. RSCF developed the ranching initiative upon request by the Rhino Ark Charitable Trust and Bongo Surveillance Programme (working collaboratively with the Kenya Wildlife Service), which anticipate multiple *in situ* bongo management centers over the coming years. The ranches coordinate long-term breeding, management and surplus with RSCF and the International Studbook and contribute to *in situ* conservation via philanthropic support. All animal transactions are reported to the USDA and FWC in accordance with permit regulations. Eight bongo were transferred to Micanopy during 2017.

Other in-house projects: During 2015, RSCF phased out management efforts for Hawk-headed parrots (*Derophtus accipitrinus accipitrinus* and *D. a. fuscifrons*), primarily due to aging animals and the death, from old age, of the last-known, male Brazilian hawk-head in North America. RSCF continues to maintain a small group of the nominate race of hawk-heads, along with Golden conures (*Guaruba guarouba*), Pygmy marmosets (*Cebuella pygmaea*), Golden Lion Tamarins (*Leontopithecus rosalia*) and Golden-headed Lion Tamarins (*Leontopithecus chrysomelas*). RSCF participates in AZA (American Zoo and Aquarium Association)-sanctioned Species Survival Plans, Population Management Plans and studbooks for all housed species, and voluntarily maintains its animal database with ISIS, the International Species Information System. During 2017, pygmy marmoset breeding was again expanded to help recover the dwindling North American captive population, although the demographics of the population continue to pose significant, long-term challenges to recovery (male sex-ratio bias). RSCF maintains 9 family groups, most comprising senescing animals, although one group is still reproducing. RSCF's commitment to Golden-headed Lion Tamarins (*Leontopithecus chrysomelas*) and Golden Lion Tamarins (*Leontopithecus rosalia*) is unwavering and RSCF works closely with the population managers for both species.

Tropical Conservation Institute at Florida International University (FIU): RSCF and FIU formally teamed during 2014 to launch a broad interdisciplinary and international conservation platform named the Tropical Conservation Institute (TCI) under FIU's School of Environment, Arts and Society. A collaboration agreement between FIU and RSCF (executed in 2014), which establishes how TCI is coordinated and runs, links both organizations to a \$5M challenge grant agreement between The Batchelor Foundation and FIU, which establishes initial TCI operating capital and leverages incoming, new program revenues over five years.

A full prospectus for the Institute, including budget and program priorities, is available upon request.

Overview—FIU Tropical Conservation Institute, School of Environment, Arts and Society

Building upon its history of excellence in conservation education and research, FIU has established the Tropical Conservation Institute (TCI). In partnership with the Rare Species Conservatory Foundation (RSCF), the School of Environment, Arts and Society (SEAS) in the College of Arts & Sciences will stop extinctions by empowering FIU graduates and conservation practitioners to protect ecosystems and species in the tropics and sub-tropics. TCI will leverage SEAS' broad portfolio of research, education, and outreach programs focused on tropical and sub-tropical ecosystems. FIU's geographic expertise in conservation extends from South Florida to the Caribbean, Central and South America, Africa, the Pacific and Asia. These regions comprise the top global biodiversity hotspots - areas of exceptional species richness facing extraordinary threats. TCI will build upon the years of innovative and successful

conservation methods and programs developed by RSCF and combine them with FIU programs to position TCI on the leading edge of tropical conservation action, education, research and outreach. The scope of the partnership will position TCI to be truly transformative on a global level.

The Need

Biodiversity, an essential foundation for a sustainable future, is being lost at an accelerating rate. We must act swiftly and decisively to protect biodiversity, and develop solutions to preserve critical species and their ecosystems while ensuring that human communities prosper. Nature's plight demands new approaches to conservation, in particular those that focus on species survival and ecosystem protection. Innovation is key for implementing real-time conservation action and training the next generation of conservation professionals here and abroad. A novel academic platform is needed to deliver effective conservation education, training and on-the-ground programs — linking universities, practitioners and institutions dedicated to conservation.

The Vision

The FIU Tropical Conservation Institute will address the critical issues driving wildlife to extinction and the decline in ecosystems, including habitat loss, wildlife trade, climate change, competition over water and land resources and disruptions to coastal marine ecology, in effect, developing tools to prevent the extinction of tropical species. Our global collaborators in academic institutions, NGOs, governments, and the private sector have long recognized FIU's leadership and international influence in the field of tropical conservation. FIU's degree programs in Biological Sciences and Earth and Environment have trained thousands of students for careers in environmental conservation around the globe.

As the primary partner, the RSCF, offers decades of experience solving critical conservation problems and a network of collaborating organizations in biodiversity hotspots. RSCF designs sustainable recovery programs for endangered flagship species in the wild, and works in collaboration with governments and other conservation/research organizations to protect critical habitats. RSCF also provides consulting and technical services to conservation teams, and forms educational, political and economic partnerships to expedite conservation projects.

Initially, the FIU Tropical Conservation Institute will work with some of the world's most threatened species in three bio-geographical areas — Latin America and the Caribbean (including South Florida), East Africa and the tropical Pacific.

The FIU Tropical Conservation Institute will save species by establishing:

- Partnerships and collaborations to deliver transformative conservation programs.
- A network of Conservation Fellows — extraordinary scientists who will enhance research opportunities, provide field training for students, and deliver innovative courses for undergraduate and graduate students.
- Enhanced student and faculty professional opportunities, offering access to specialized conservation facilities in South Florida and around the world.
- FIU as an international leader in applied conservation training for local and international students. New professional master's programs will attract conservation practitioners and decision makers from around the world.
- New collaborations between science and the humanities to increase public understanding of biodiversity loss

Feral parrot monitoring: During 2017, RSCF continued passive, non-invasive assessment and monitoring of a non-native, Palm Beach population of Green-cheeked Amazon parrots (*Amazona viridigenalis*). Globally endangered

and endemic to Mexico, the species has persisted on Palm Beach since the 1940's. RSCF has monitored the population for 20+ years, under an agreement with the Breakers Hotel and special permitting from the Florida Fish and Wildlife Conservation Commission. Activities include nest-site monitoring, intra-cavity inspections and video recording, banding/weighting of chicks, rehabilitation, public education and outreach (with The Breakers' education staff) and annual recruitment estimation.

Florida Grasshopper Sparrow:

[U.S. Fish and Wildlife Service Grant Agreement # F12AP01156, Captive Breeding, Florida Grasshopper Sparrow]

Interim Report for F12AP01156: 30 October 2017

Flock composition at RSCF:

As of the date of this report, 31 FGSP (17.13.1) reside at RSCF:

Living wild-caught birds and wild-parent-reared offspring:	8.6
All others (hand-reared birds from 2015-2017 and captive-bred offspring from 2017):	9.7.1

All specimen records are tracked using the ARKS4 database; historical taxon report is available upon request.

Outdoor enclosures:

Seven breeding pairs were assembled during the 2017 nesting season from 7 wild-caught males, 5 wild-caught females, one hand-reared female (collected as a 4-day-old chick from Avon Park in May 2017) and one May 2017 parent-reared female (Ranch). Four of the pairs were proven pairs collected from the wild, two of which were collected as family groups from TLWMA.

These seven breeding pairs are housed outdoors with one pair per soft-sided, mesh enclosure. Three pairs are housed in each of two, three-enclosure clusters built in July 2017 and one pair housed in a stand-alone enclosure prototype built in 2015.

An additional, large, stand-alone soft-sided enclosure was built in July 2017 to accommodate the parent-reared offspring from the collected TLWMA family groups and other captive-bred offspring from 2017. Following a spate of *Atoxoplasma*-related mortalities in early September (6 of 7 independent, parent-reared offspring; see following discussion), the 2.0 survivors were relocated to the porch enclosure of Bunker #1 (below). The most recently constructed HY cage is currently empty.

Six additional breeding enclosures, in clusters of three each, were designed in 2017 to accommodate the 2018 field and captive-breeding seasons.

Indoor enclosures:

Bunker #1 (3.2.1): Porch = 2.0 (1.0 parent-reared TLWMA offspring + 1.0 day-one artificially incubated/hand-reared offspring)

Cage A = 2015 HY female and her captive-bred, parent-reared offspring (0.0.1, to be sexed and banded)

Cage B = 2015 hand-reared female and hand-reared male from Cage A

Bunker #2 (4.3): Three unrelated pairs assembled from 2016 hand-reared birds plus one additional hand-reared male; pairs housed individually; male housed singly.

Bunker #3 (3.2): Two unrelated pairs assembled from 2016 hand-reared birds plus two additional hand-reared males; pairs housed individually; males housed singly.

For reference, at the start of the 2017 breeding season, the bunker birds comprised 9 minimally related breeding pairs (including one 1.2 trio, for a total of 9.10 birds). Following 2017 breeding-season mortalities (1.0 to snake during hurricane; 0.1 to oviduct problem (pending histo); 0.3 to *Atoxoplasma*) and recruits (2.0.1), the bunker groups now total 10.7.1

Husbandry:

Feeding and supplement regimens are as described in previous reports. “Cricket rocks” were introduced during 2017 to reliably distribute live crickets to bunker birds, whereas live crickets were broadcast within outdoor enclosures. Nesting females or females with young were fed minimally three times/day, with bunker females fed Q3hrs due to lack of male attentiveness. Sources for all waxworms, mealworms and various-instar crickets (Timberline), vitamin/mineral supplements, seed mix, spray millet, feeding materials, nesting hay, etc. are unchanged from 2016. Crickets are continuously gut-loaded with organic vegetable and mineral supplements to ensure highest nutritional quality. Feeding and water trays are changed daily. Bunker mats, husks, nesting nuts, orchard grass and sprouted wheat grass are changed regularly and as necessary to maintain cleanliness.

After confirmation of *Atoxoplasma* during 2017, ESB+ was added to all FGSP water bowls using the established protocol of 1 g/L given 5 days on/2 days off for four weeks, repeated quarterly.

Reproductive/rearing effort:

Field-collected family groups:

Both family groups collected from TLWMA successfully raised seven young (4 and 3 chicks per family, respectively) to independence in the new soft-sided enclosures. A weak chick was cross-fostered into the 4-chick family group on the day of collection but died the first night; it is not included in these totals. Six of the seven offspring died from *Atoxo* in early September, leaving only one male survivor.

The Ranch family group successfully raised three young to independence before a corn snake killed two offspring and the adult female. Fortunately, the surviving chick, which was cross-fostered into the family at the time of collection, is female. It has been left with the adult male to form an unrelated breeding pair. Both are doing well.

Total field-collected, parent-reared to independence: 10 (3.5.2)

Total field-collected, parent-reared, surviving: 2 (1.1)

Bunker pairs:

Egg-laying among the 10 bunker females commenced in May and has continued through 29 October 2017. All females attempted nest building to varying degrees of success multiple times throughout the season. Six of the nine paired males assisted, albeit sporadically, with nest-building, but none attended to the females before, during or after egg-laying, as in 2016. In addition, the two males in Bunker #1 were observed to attack newly hatched chicks and were subsequently removed from their breeding enclosure when the females re-nested.

Seven females' nesting attempts were either always incomplete or always failed for a variety of reasons, including: (1) eggs laid outside of nests; (2) sporadic or discontinuous egg-laying within clutches; (3) failure to incubate; (4) egg destruction upon or soon after laying; (5) soft or addled eggs; (6) chicks discarded; (7) chicks not fed or improperly fed.

Egg production per female (8-51 eggs) and total duration of laying (74-156 days) varied widely among the eight females that laid eggs, as follows:

<u>Female</u>	<u>#Eggs</u>	<u>Laying period (dates)</u>	<u>Laying period (days)</u>
<i>Bunker 1:</i>			
L05515A	24	06/15/17 - 09/12/17	89
L081115	15	06/22/17 - 09/04/17	74
<i>Bunker 2:</i>			
L072515C	23	06/21/17 - 10/12/17	113
16CBB6	18	06/10/17 - 10/08/17	120
16H10W	51	05/26/17 - 10/29/17	156
16H14W	14	05/21/17 - 08/15/17	86
16H16R	8	06/09/17 - 08/28/17	80
<i>Bunker 3:</i>			
16H16W	10	05/28/17 - 09/21/17	116

Successful reproduction among bunker birds was very low. Three of the 10 bunker females successfully laid, incubated and hatched clutches, all without male assistance. Two of the oldest females, raised in 2015 and housed in Bunker #1, successfully reared 3 and 2 chicks, respectively, beyond fledging, with both chicks from one clutch (including a cross-fostered, incubator-hatched chick) surviving to independence. One of these parent-reared chicks is still alive; the other's COD was confirmed as *Atoxo*. The failed clutch of three fledglings by the other Bunker #1 female was attributed to the female over-feeding, as all had severe developmental and neurological abnormalities; *Atoxo* was not detected from these offspring.

Another 2015 female hatched three chicks (one clutch of one, one clutch of two) and reared the chicks to the day of fledging; all three were found dead in the nest on their anticipated, respective fledge dates. Tissues were too autolyzed for COD to be confirmed by histopathology, but *Atoxo* is suspected.

Total parent-reared, captive-bred fledglings: 5

Total parent-reared, captive-bred fledglings surviving to independence: 2

Total parent-reared, captive-bred offspring surviving: 1 (0.0.1)

Artificial incubation, hand-rearing and cross-fostering:

Because bunker females laid eggs prolifically, but rarely in nests and naturally incubated, eggs were removed for artificial incubation to ascertain fertility and to attempt day-one hand-rearing, and potential cross-fostering, of entirely artificially incubated eggs. As in 2016, day-one incubation proved very challenging, with most eggs failing either during the first few or last few days of incubation. Whereas partially naturally incubated eggs hatched in the incubator at 37.65 C, 62%RH and 2-hour turning (+ 2 manual turns Q12 hrs), day-one artificially incubated eggs hatched more reliably at 37.68 C, 62%RH, with the same turning procedure. Upon pipping, eggs were transferred to a hatcher at 37.55 C, 75%RH with no turning, and subsequently brooded as described in the 2016 annual report.

71 eggs from 8 bunker females were artificially incubated between 29 May and 1 September. 51 (72%) proved to be fertile, of which 16 (31%) hatched unassisted. Chick hatch weights from 2017 captive-laid, entirely artificially incubated eggs (1.2 ± 0.163 g) were significantly lower than those from 2016 field-collected eggs that were partially naturally incubated and subsequently artificially incubated until hatching (1.7 ± 0.160 g). The cause of this difference is unknown, but may relate to female age, size, nutrition or other physiological factors. As in 2016, all 2017 incubator hatches were strong.

Hand-rearing (using 2016's protocol) was attempted with six hatchlings, of which only one survived to independence and is still alive; the others succumbed to the typical enteritis/septicemia encountered with incubator-hatched chicks during 2016. Five of six attempts to cross-foster incubator hatchlings under naturally nesting FGSP in Bunker #1 (1A or 1B) failed with chicks rejected by one or both parents; one chick was raised to semi-independence but succumbed to *Atoxo* in Bunker 1A.

Four attempts to cross-foster incubator-hatched FGSP chicks under society finches converted to an all-insect diet also failed. Finches fed FGSP chicks insufficiently and all chicks failed to develop normally over the first few days and ultimately succumbed to septicemias.

Incubation Summary (37.68 C, 62% RH, auto-turning Q2hr/ manual Q12hr):

Eggs (71) Fertile 51 (0.72) Hatch 16 (0.31)

Incubator-hatched rearing success:

Hand 1 of 6 (0.17) X-foster finch 0 of 4 (0.0) X-foster FGSP 0 of 6 (0.0)
[one raised to near-indep.]

Total recruited from artificial incubation: 1 male

Total recruited from wild-collected, hand-reared (Avon Park): 1 female

Total 2017 FGSP offspring surviving: 5 (2.2.1)

Comments:

As in 2016, parental incompetence of hand-reared, adult FGSP seems to have impeded captive-breeding success. All hand-reared males sing dutifully and the high egg fertility rate indicates that breeding pairs are reasonably

compatible and are copulating successfully most of the time. Male aggression toward females is high throughout the season, and may be a consequence of enclosure design and/or configuration or proximity of males to one another. Males only sporadically assist females in nest building, and are otherwise inattentive to females and young. In addition, some males discard and/or attack newly hatched chicks. Several males display to neighboring males, but visual barriers and partitions appear to successfully prevent males from sparring through enclosure mesh or chasing one another along adjoining partitions. Starting this fall, we are separating aggressive males from females in the indoor enclosures.

Hand-reared females rarely complete the natural reproductive process. Nest building is erratic with few females laying eggs in nests or attempting to incubate, hatch and raise clutches. Those females that successfully incubate must rear their young on their own and are typically unsuccessful. Only one of the three females that hatched and attempted to rear young did so successfully through chick independence.

While disease impacted all captive-bred and field-collected FGSP youngsters, poor parenting represented the biggest impediment to growing the captive population. Cross-fostering was only partially successful with one incubator-hatched chick that was introduced under a successfully nesting bunker FGSP with same-aged young. All other cross-fosters were rejected, and experiments to develop a society finch colony as a surrogate FGSP system was unsuccessful. Finch behaviors, metabolism, chick development and brooding cycles are too incongruous with FGSP natural history to offer a parenting solution.

The unprecedented success of a day-one artificially incubated, day-one hand-reared FGSP during 2017 required a heroic commitment of time and labor, similar to the challenge of artificially incubating field-collected eggs and hand-rearing chicks in 2016. While feasible, day-one hand-rearing is onerously time-consuming, technically challenging, and rarely successful, contrasting sharply with RSCF's 100% success in hand-rearing field-collected, partially parent-reared chicks that are at least four days old (e.g., the Avon Park female from May 2017). Our working hypothesis, derived from research with Psittacines and other Passeriformes, is that proper immune-system health, including essential gut-flora, is conferred during chick development via parental feeding. The ultimate, eventual parental competency of field-collected/hand-reared birds remains unproven, as most of RSCF's founder birds represent hand-reared, field-collected youngsters from 2015 and 2016. Breeder age, proximity to parent-reared birds during and after sexual maturity and pairing with parent-reared mates may enhance reproductive success over time.

The overwhelmingly successful parenting exhibited in field-collected FGSP families underscores the immense conservation and recovery value of wild-collected, proven FGSP adults. These wild birds offer the full complement of wild behaviors and natural parenting skills to successfully raise their own young and similarly-aged hatchlings cross-fostered into their clutches.

Altogether, these observations reveal that FGSP captive breeding, captive population growth, and ultimately, species recovery, depend upon achieving a sustainable breeding system comprising parent-reared birds that can competently raise their own and cross-fostered young. Cross-fostering is important, as it is the only proven, viable means of preserving the significant genetic diversity from 2016 field-collected eggs (from TLWMA), currently represented as hand-reared adults. With the collapse of all wild FGSP sub-populations, this genetic diversity is critical to preventing the FGSP's extinction.

Adult Mortalities, Disease:

During the 2017 breeding season, a total of 1.3 adult bunker birds died—a male due to a corn snake that entered during Hurricane Irma and used evacuation cages as scaffolding to reach an FGSP breeding enclosure, and three females to *Atoxo* (confirmed in two from PCR and histopathology, the third strongly suspected). Among outdoor enclosures, a corn snake accounted for the death of an adult, field-collected Ranch female.

Adult mortalities: 1.1 corn snake 0.4 *Atoxo* (2 confirmed, 2 suspected)

Juveniles:

7 of 10 young FGSP mortalities from bunker and outdoor families were attributed to *Atox*, confirmed in three, fresh specimens by UGA's histopathology and/or PCR analyses of vascular and GI-tract tissues (sample report included with this report; all others on-file and available). Tissue autolysis prevented confirmation in the other specimens. Analyses are most efficacious with fresh tissues harvested within an hour of death, submitted under refrigeration or immediately fixed or frozen. The other three mortalities of near-independent young were from a single bunker clutch (1B) and COD was determined to be over-feeding and poor parental care.

Histopathology, PCR and culturing are pending with several archived samples, all of which aim to improve test sensitivity and evolve a protocol for screening live birds. One or more *Coccidia*-like organisms have been suggested, but the taxonomy and phylogenetics of *Atoxoplasma* and *Isospora* are incomplete and these protozoans' life cycles are complicated and poorly understood. Specimen history and pathology records strongly suggest that death from the variant(s) of *Atox* is acute and involves severe damage to vascular tissues (e.g., heart, spleen, liver, kidney).

Whether the organisms originate as gastro-intestinal parasites through the typical *Coccidia* fecal-oral route and subsequently cross the gut integument/coelum to invade blood-rich tissues is unknown; more than one species of organism may be involved in the observed FGSP mortalities. Pre-and-post-fledging young appear to be most susceptible, likely due to their developing immune systems and pathogen dosage-dependence arising from repeated feeding by parent disease-carriers. The fact that adult, breeding females may also succumb implicates stress as a co-factor in all *Atox*-related mortalities.

ESB+ water treatment has been added to the captive FGSP husbandry, but the drug's effectiveness is unknown. Apparently birds treated at WOCC for over two years still test *Atox*-positive.

The pathogen(s) must be isolated, cultured and DNA-sequenced to confirm identification, from which a live test and treatment plan can evolve. This research is currently the top priority for the FGSP captive-breeding effort, as it will inspire critical husbandry and management refinements.

RSCF flock-management plans:

Enclosure design, placement and flock management largely hinge upon disease assessments and pathogen-mitigation approaches. Housing birds indoors is costly and labor-intensive, but enhances early detection of health issues and may eliminate or reduce some environmentally induced problems and pathogens, unlike outdoor enclosures. Ultimately, as discussed above, a successful FGSP captive program depends upon parent-reared birds that retain as many natural behaviors as possible. Achieving this, while reducing losses from pathogens, stress-related myopathies, injuries, predators, etc., demands a calculated balance between maximizing reproductive potential and minimizing mortality and morbidity at the flock level. The imperative to quickly produce a viable captive flock is clear, as the wild population is plummeting to extinction. Augmenting the existing captive flock with whatever wild birds remain on the landscape may be the only means to ensure a sustainable FGSP population of any kind; however, the opportunity to source additional wild founders is quickly vanishing.

Aside from rare mortalities from corn snakes—a risk we have minimized with enclosure improvements and aim to eliminate with new enclosure designs—all other, significant health issues at RSCF can be attributed to protozoan disease. As laboratory results accrue this fall/winter, we plan to design and construct new outdoor enclosures that accommodate all of the FGSP and minimize disease-exposure risk.

The extent and availability of operational funding will largely determine the scale, scope and future trajectory of the captive effort. Captive-breeding success, proper flock management and eventual species recovery hinge critically upon sustainable, long-term financial support, which thus far has proven elusive to the FGSP program

II. 2017 Conservation and Research Program Field Projects

Dominica program:

Over the past half-century, Dominica's endemic Amazon parrots, the Sisserou and Jaco (*Amazona imperialis* and *A. arausiaca*, respectively), have proven to be effective conservation flagships for Dominica's diverse oceanic rainforest ecosystem. Continuous parrot-conservation and public-education efforts focusing on the Sisserou, Dominica's national bird and emblem, have achieved a broad base of public support and awareness, along with significant protection of Sisserou habitat, including the oldest forest stands on the island. Both parrot species' secretive natures and Dominica's difficult terrain often have impeded quantitative research into the parrots' ecologies, even as a comprehensive parrot-conservation program has evolved and yielded tangible results. Current field-research activities continue to quantify the parrots' distribution and abundance using GPS/GIS survey methods and direct counts. Research teams use new camera technologies to monitor and document reproduction and parental care, and are quantifying the botanical inventories of critical parrot nesting and foraging habitats. The Dominica parrot-conservation program has stimulated novel research and enhanced protected-area policies island-wide, ensuring a future for the Nature Island's vast montane forests and its winged ambassadors.

Since 1997, RSCF and Dominica's government have partnered to research and conserve Dominica's parrots. The program is multifaceted, and includes:

- extending formal, legal protection to all forests surrounding Morne Diablotin, nesting stronghold for the Sisserou, and expanding protected areas to augment the Morne Diablotin and Morne Trois Pitons National Parks
- developing management and conservation strategies for the Jaco and Sisserou with Dominica's Forestry, Wildlife and Parks Division, including new protected-areas policies (Morne Diablotin National Park and recent annexations, 1999-2005) and wildlife legislation (Wildlife Act, amended 2003-2007 and currently under Cabinet review for inclusion in a new National Parks system)
- coordinating support for ongoing research, staff capacity building and education programs with public zoological facilities, other non-profit organizations, UNDP/UNEP and local and international NGO's. Efforts include field training, delivering new research technologies and equipment, infrastructure enhancements (e.g., overhauling the Parrot Conservation and Research Centre), field vehicles, and funding outreach programs (e.g., continuous PSA's, annual Caribbean Endemic Bird Festival, trail and road signage, publications).

The broad-based conservation program has produced many significant results, including formative documentation of reproduction and bi-parental care in the Jaco and Sisserou, delineation of key parrot habitat, and the compilation of area-specific biological inventories. Most significantly, on January 21, 2000, culminating a two-year, \$1.086 million campaign spearheaded by RSCF and the Dominican government, Dominica formally declared the new Morne Diablotin National Park, encompassing ~8500 acres (3443 ha) of pristine rainforest and the principal nesting area for the Sisserou. Since then, RSCF funds have enabled seven additional, adjacent, private land parcels to be annexed into the park, and the Morne Diablotin National Park Visitors Centre and Forestry field station to be completed and serve at a vital management outpost for the park.

Outreach, education: During 2017, in addition to assisting the parrot field conservation program, RSCF provided operational funding for the Parrot Conservation and Research Centre at the Botanical Gardens and continued its 14-year commitment to on-island environmental awareness efforts by sponsoring print and radio Public Service Announcements and special programming (e.g. Voice of Life Radio, DBS radio and television) and the 2017 Caribbean Endemic Birds Festival. In addition, RSCF again distributed discretionary funds to continue comprehensive population surveys of the Sisserou parrot. These surveys, which have become essential to estimate wildlife population recovery after Hurricane Maria (see below) replicate the GPS/GIS survey methodology co-developed by RSCF and Dominica's Forestry Division in 2001 to estimate current population size and distribution by estimating parrot densities across vast, montane forest habitat.

Hurricane Maria-- Catastrophic Hurricane Maria impacted all of Dominica as a Category 5 hurricane in September 2017 as what is now regarded as the strongest hurricane to strike the island in its recorded history. RSCF immediately provided emergency assistance to the Forestry, Wildlife and Parks Division with shipments of equipment and supplies (chain/pole saws, brushcutters, forestry tools and equipment, personnel gear tarps, materials for rebuilding aviaries and physical infrastructure, etc.) and coordinated with the Loro Parque Fundacion in Tenerife, Spain to acquire a new 4WD, diesel, double-cab Forestry truck since all of Forestry's vehicles were destroyed, looted or damaged during the hurricane. RSCF also mobilized funds to commence post-hurricane assessment of parrot populations. Both parrot species survived Maria, and long-term monitoring, concerted conservation actions, community outreach and Forestry staff support measures will be required for both species to recover in the wild, as they did following Hurricane David in 1979. All aspects of Dominica's economy, energy and water-supply systems, physical, social and political infrastructures were significantly impacted, and the country must sustain a very long recovery process to fully rebuild.

Mobile Wildlife Laboratory: During 2011, RSCF shipped a self-contained RV from Florida and equipped it to become a stand-alone, mobile wildlife laboratory, housed at the Parrot Conservation and Research Centre in Roseau. The laboratory sleeps six and provides a flexible, environmentally controlled facility for researchers and Forestry staff working on special wildlife cases (e.g., rearing/rehabilitation of wildlife, specialized veterinary care, extended stays in the field). From 2014-2017, additional veterinary supplies, equipment and pharmaceuticals were added to the facility—most importantly an isoflurane anesthesia machine. The anesthesia machine, the only one of its kind on the island, provides safe, reversible anesthesia for avian examinations and procedures. Reillo and support staff used the mobile lab as an operations base during 2017, and it somehow survived the hurricane with minimal damage. Future use of this facility will be determined as all of the PCRC is rebuilt and refurbished during 2018.

Aviary rebuilding and expansion: RSCF has assisted Forestry and worked with partnering organizations and NGOs to sustain the PCRC since 1997. The large-flight aviary constructed in 2008 was destroyed by Hurricane Maria in 2017, but a replacement aviary was provided to Forestry for construction in 2018. All aspects of the aviary, including enclosures, food preparation, isolation, rehabilitation and treatment areas, personnel support and equipment storage, are being addressed. Importantly, all of the aviary birds survived Maria unharmed, and the resources and capacity exist to maintain all non-releasable parrots on Dominica. There is no scientific or conservation justification for exporting wildlife to ex situ facilities, as has been suggested by outside, non-credentialed parties. The Forestry Division's legislated mandate, as wildlife authority and CITES Scientific Authority, assigns responsibility for all wildlife matters to the Division.

Caribbean Endemic Birds Festival: Since its inception in 2002, RSCF has sponsored the Forestry, Wildlife and Parks Division's participation in the CEBF, the broadest annual environmental outreach program for children in the Lesser Antilles (>4,000 children in 2016). The program runs for one month in May, and enables children from across the island to celebrate the richness of Dominica's bird life, totaling 228 species. The program is a collective effort between Forestry, RSCF, local sponsors and BirdsCaribbean, the latter of which produces the *Journal of Caribbean Ornithology*. Each year, Forestry staff voluntarily lead presentations, tours, and media releases on the ecology and conservation of Dominica's avifauna, engaging all radio, television and print media outlets island-wide. Experienced Foresters accompany school groups on birding expeditions, seabird-watches and rainforest tours, and give illustrated presentations at the National Botanic Gardens—all on their own time. The Division also hosts a *BirdArt* contest and exhibition (300+ entries last year), for children from pre-K to Seniors (IV Form). CEBF has grown each year since its inception. RSCF's annual contribution supports transportation, supplies for educational materials, field binoculars for students, field consumables, the *BirdArt* and *Radio Quiz* programs, and press-release materials.

Professional development and training for Forestry staff: During 2017, RSCF continued to provide sponsorship for key Forestry personnel to attend regional conservation meetings and workshops, and to engage at RSCF's Conservatory for joint-program development. RSCF evacuated Forest Officer Stephen Durand from Santo Domingo, DR to RSCF headquarters following his stranding from Hurricane Maria, and provided travel and logistics

support for him to return home as soon as possible. During his impromptu stay at RSCF, Durand and Reillo identified emergency-relief needs and initiated a rapid-response strategy, even as all communications and Dominica's ports were closed for weeks. This enabled critical supplies to flow to Forestry rapidly.

Establishing agro-processing facility in village of Dublanc. This is an extension of the Morne Diablotin National Park/U.N. Cluster World Heritage Site program initiated by RSCF in 2000. RSCF engaged the United Nations Development Programme (UNDP) to solicit FAVACA (Florida volunteer corps.) to provide two citrus production and marketing specialists to assess citrus management in the Morne Diablotin area. The report, filed in 2006, indicates adequate acreage, production and suitable fruit quality for small-scale processing. The initiative aims to provide livelihood development for farmers and agricultural stakeholders adjacent to Morne Diablotin National Park who suffer significant crop losses to parrots and other protected wildlife. Current citrus-crop utilization is less than 40% in Dominica, largely due to on-the-tree fruit storage, and local, fresh-fruit market sales only. Micro-processing enables farmers to explore local fresh juice and extract-product markets and utilize a greater percentage of fruit set each year, thereby reducing wildlife-human conflicts. The Jaco parrot (*Amazona arausiaca*) exploits agriculture on Dominica, and while fully protected under law, the species is no longer considered imminently threatened. As opportunists, Jaco parrots supplement their food intake with readily available citrus (primarily to extract seeds), but do not rely on agriculture for adequate nutrition. The Sisserou parrot (*A. imperialis*) does not forage in agricultural areas. Smaller birds, such as bananaquits, tremblers and thrashers, also consume agriculture, along with agoutis, maniocou (opossum) and rats.

The Western Farmers Citrus Association is incorporated and fully registered as a Community Based Organization (NGO), and serves as the local consortium for agricultural stakeholders in the Morne Diablotin area. The Association has been recognized by both Dominica's Ministry of Agriculture and the Environment and UNDP as the appropriate entity to receive duty-free agricultural concessions consigned by NGO's to Government. During 2008, RSCF delivered two state-of-the-art fruit processors manufactured in Florida by FMC, the world's largest manufacturer of processing equipment (www.fmctechnologies.com):

- 1 Fresh 'n Squeeze Multi-fruit Juicer, 240VAC, with service parts
- 1 Produce Plus Juicer (for mangos, pineapple, guava, etc.)

The shipment also included spare and maintenance parts for the machines and a fully purchased, 20' shipping container for storage, with all items consigned to the Ministry of Agriculture and the Environment as duty-free. During 2012, the Ministry officially commissioned operations of the completed micro-processing facility to the Association, which began commercial processing under its own label in early 2013. The facility is located in Dublanc, a small, coastal village situated at the base of Morne Diablotin on Dominica's west coast, and has the potential to serve growers within a 10-mile radius. During 2016-2017, the facility processed and distributed juices under its "Jaco" label. Processing includes juices and extracts of all types, with waste material suitable for industrial uses (e.g., organic solvents), organic compost and animal feeds. This facility is intended as a model to be replicated across Dominica's agricultural communities to enhance local crop management, community cooperation and juicing efficiency, while simultaneously reducing wildlife depredation of tree-stored fruits.

RSCF Research Associate Activities:

Crocodylian research and conservation by Research Associate Matt Shirley—Shirley is currently based at Florida International University and Cote d'Ivoire, developing conservation recovery strategies for the West African slender-snouted crocodile with Abidjan National Zoo and the Ivorian national parks service. A full project description, including comprehensive budget, objectives, timelines and partner responsibilities, is available from RSCF. Shirley's work has expanded to include collaboration with local students and environmental stewards, and now also includes a pangolin research initiative. Below is a summary of the scope of work for Shirley's crocodile program:

This project aims to reverse the extinction trajectory of Africa's most Critically Endangered crocodylian (the West

African slender-snouted crocodile *Mecistops cataphractus*) through captive breeding and reintroduction in the Upper Guinea forest region. The slender-snouted crocodile is a evolutionarily and ecologically unique crocodylian species endemic to the forested wetlands of the Upper Guinea and Congo biomes. Recent research has shown that the populations in these two regions have been isolated for > 7.5 million years and are readily distinguished morphologically and genetically. As a result, they are currently being split into two unique species. Crocodile surveys in West Africa over the past decade have detected < 50 individual *Mecistops*, of which only three were adults. Habitat loss and historic hunting have threatened this species and small, fragmented populations now impede recovery. To combat this, we are reviving captive breeding efforts for this species at the Abidjan National Zoo, evaluating reintroduction sites for ecological and socio-economic suitability, and reintroducing captive bred crocodiles for population reinforcement or revival in the case of local extinctions. By coordinating activities with national parks and protected areas development the project will be contributing to the burgeoning wildlife conservation efforts in Cote d'Ivoire. The long-term impacts will be further expanded through extensive capacity building with local stakeholders, national parks staff, students, community members and wildlife agents. This is the first ever project in Africa specifically designed to reinforce depleted and revive locally extinct crocodile populations.

Key Objectives

- Implement reintroduction of captive *M. cataphractus* into the wild for the purpose of population augmentation and/or re-establishment of locally extinct populations. By establishing a biological and social basis for crocodile reintroduction our project is poised to make significant headway towards the conservation and future sustainability of this emblematic denizen of the Upper Guinea forests.
- Develop the individual and institutional capacity to manage and monitor crocodile populations in West Africa. We will work with individuals identified by our in country collaborating organizations to provide extensive species-specific monitoring training. These individuals will participate in all survey and village-based efforts, as well as be integral in planning the crocodile releases and post-release monitoring. By including local personnel at all levels of this work, we will empower Ivoirians to work on traditionally ignored species of conservation concern to meet the mutual goals of wildlife conservation and local community support.
- Re-establish a permanent breeding colony of slender-snouted crocodiles at the Abidjan National Zoo. This will not only involve selection of the crocodile founding colony, but rehabilitation of the facilities and training of staff to ensure that the colony is successful in the long-term. Once completed, this will be the first example of captive breeding for crocodile conservation in Africa and can be used as a model and training program for countries throughout the region looking to improve the conservation utility of their zoological park resources.

Additional 2017 activities:

In Cote d'Ivoire, nationwide surveys were continued with work in two national parks, one community reserve, and four classified forests. These surveys will further facilitate the development of distribution and habitat suitability models for the slender-snouted crocodile, as well as inform reintroduction and conservation planning. The slender-snouted crocodile radio telemetry project advanced, including successful tagging of 17 individuals and four months

of follow days in Tai National Park, and two new research programs on use of eDNA and drones as monitoring tools for critically endangered crocodiles were initiated. This work was supported by funds from the Future for Nature Foundation, CrocFest, Minnesota Zoo and Mohamed bin Zayed Species Conservation Fund through the purchase of field supplies and on-ground costs for fuel, personnel, travel, and food/lodging. Finally, a 10-day training workshop was held for national parks partners on crocodiles, manatees, and turtle/tortoise biology, research, and conservation planning supported by the Oklahoma Zoo. In Benin, surveys for slender-snouted crocodiles were conducted in two different protected areas, and capacity-building of three Ghanaian scientists working on crocodile research and conservation was supported in situ in Ghana with support of funds from Future for Nature Foundation and CrocFest through the purchase of field supplies and on-ground costs for fuel, personnel, travel, and food/lodging. The 2017 year was considered a great success working with local partners for the capacity development of local, African counterparts, including the Ivorian government stakeholders and national students, as well as advancing the research agenda.

e-DNA Project:

Employing Environmental (e)DNA to Rapidly Assess Critically Endangered Crocodilians and Pygmy Hippos in West African Protected Areas

The principal organization applying for MBZ funding is University College Dublin; however this project is a collaboration with the Rare Species Conservatory Foundation. Following are details for both organizations; University College Dublin (UCD), Earth Institute: UCD (est.1854) Earth Institute is Ireland's largest research institute dedicated to earth and environmental sciences and aims to identify, clarify, and find solutions to the most pressing global environmental problems facing us today. Work on these challenges is underpinned by expertise in a number of key disciplines such as: Water, Climate, Ecology and Evolution, and Environmental Policy & Behaviour. Research is facilitated and supported by the latest laboratory and field equipment, new purpose-built laboratories in the UCD Earth Institute facilities on campus and a team of research support staff.

UCD's research group (<http://www.ucd.ie/area52/>) is primarily focused on aquatic organisms- conservation, ecological and population genetics, as well as evolutionary biology.

Key personnel / titles / qualifications / email address:

Dr. Fiona Bracken Co-PI, Postdoctoral Research Fellow, fiona.bracken@ucd.ie

Dr. Matthew H. Shirley, Director of Project Mecistops

Chair of West and Central Africa Region for the IUCN/SSC Crocodile Specialist Group, mshirley@rarespecies.org

Dr. Allassane Ouattara, Director, Environmental & Aquatic Biology Lab, Nangui-Abrogoua University (Abidjan)
allassane_ouattara@hotmail.com

Project Description:

Cote d'Ivoire was chosen as the focal country for this project for two reasons: Firstly, the protected areas here are the last known strongholds for the West African slender-snouted crocodile and contain important populations of pygmy hippo. Because of this, they provide the only known areas we can be sure of having positive control sites for the presence of both species – notably in Tai National Park. Secondly, Cote d'Ivoire is currently the focal country for the crocodile conservation initiative "Project Mecistops," run by the Rare Species Conservatory Foundation. Project Mecistops has signed collaborative agreements with the Ivorian national parks authority, forest reserve management authority, the wildlife authority, and a local university, as well as all the necessary research permits. In addition, Project Mecistops has significant infrastructure in place, including dedicated vehicles, boats, other field supplies, as well as local students. This guarantee of sampling and project infrastructure would be lacking in other countries. The project described here is a pilot initiative aimed at developing a rapid census technique for these Critically Endangered and Endangered species. Once it is shown effective here, we aim to carry out the same work in Liberia, Sierra Leone, Guinea, and Ghana.

Conservation status of the target species and the importance of the associated habitat:

The West African slender-snouted crocodile is listed as Critically Endangered on the Red List on the basis that crocodile surveys throughout West Africa from 2005 - 2012 encountered only 49 individuals and only three adults. A precautionary estimate suggests that the number of mature individuals is <1,000. Continuing decline of >80% over two generations is predicted without intervention. The pygmy hippopotamus is listed as Endangered (EN) on the Red List where available evidence indicates low densities, particularly in key sites like Sapo (Liberia) and Tai (Cote d'Ivoire) National Parks. A precautionary estimate suggests that the number of mature individuals is <2,500. Continuing decline of around 20% over two generations is predicted. The major threats facing these emblematic forested wetland species are their already small population sizes brought about by historic large-scale habitat loss from commercial plantations of cacao and oil palm, shifting cultivation, mining and logging, hunting for bushmeat, conflict with artisanal fisheries, and lack of law enforcement – resulting in highly fragmented populations. The most significant impediment to conservation action is lack of real-time occupancy data, where traditional methods (e.g., camera trapping and spotlight surveys) are too time consuming and costly. Development of alternative survey techniques is imperative.

Project objectives:

1. a) Develop primers and probes from published mitogenomes specific to the amplification of short mtDNA sequences (COI and/or cytochrome b regions) for the target species; b) optimize an assay for species detection using real-time qPCR which will initially be tested using DNA and environmental (e)DNA from captive animals and a known positive wild control site (Hana River, Tai National Park). 2. a) Assess the distribution and abundance of these species throughout 25 PAs in Cote d'Ivoire using eDNA; b) compare to data obtained from both on-going ecological surveys and local knowledge (e.g., focus-group interviews). 3. Alongside evaluations of cost for method implementation, utilize quantitative models to evaluate the efficiency and efficacy of eDNA as a tool to detect/monitor wild populations. This study will be the first application of eDNA in West Africa, illustrating a novel application of eDNA to endangered species management in the African conservation context. It will also be the first use of eDNA for the detection of any crocodylian globally and pygmy hippo. Therefore, we will validate the use of eDNA in these environmental and conservation contexts whilst providing critical data to enhance management strategies for these endangered species and ecosystems.

This project is facilitating and facilitated by Project Mecistops, which aims to ensure the survival and sustainability of the West African slender-snouted crocodile in Côte d'Ivoire and the West African region. Project Mecistops breeds crocodiles in captivity for reintroduction and strengthens Ivorian, and regional, conservation authority capacity to conserve and manage crocodiles over the long term. The pygmy hippo and the slender-snouted crocodile largely share the same habitat and distribution and adding it as the second focal species of Project Mecistops integrates with the current and long-term project strategy. The proposed project using eDNA to rapidly identify these species' actual distributions critically underpins the success of all future Project Mecistops activities. Project Mecistops was initiated in 2013 and is in partnership with the Abidjan National Zoo (ZNA), OIPR (national parks and wildlife reserves), SODEFOR (forest reserves), DFC (wildlife authority), and the Université de Nangui-Abrogoua (UNA). These partnerships underscore the commitment of the Ivorian government to conservation of this Critically Endangered crocodile and to developing its capacity to more generally manage aquatic ecosystems and wildlife. With the Ministère des Eaux et Forêts we aim to develop the ZNA into West Africa's only endangered species captive breeding facility – an original objective of the zoo that but was impeded by civil strife in the early 21st century. The current focal species is the slender-snouted crocodile – we have a breeding colony of 34 adults and an 80% survival rate of captive-bred offspring. The ZNA currently has 1 pygmy hippo, but previously had 6 breeding pairs. We hope to use surplus breeding individuals from the European studbook to re-establish this colony, also for reintroduction. These species breeding programs are in close collaboration with the San Diego Zoo, with whom we facilitate infrastructure rehabilitation and keeper capacity-building. With OIPR, SODEFOR, and UNA we survey protected and non-protected areas to assess the biological and social feasibility for reintroductions. Surveys are coupled with training of students and national parks staff. UNA's wetlands and aquatic resources faculty helps

ensure our training efforts with government stakeholders include fisheries and environmental monitoring, in addition to the charismatic megafauna. Our effort to date allowed us to identify strategic actions over the next 3 – 5 years, including infrastructural development at the institutional level for protection, management and monitoring of aquatic wildlife and protecting these species in the agroforestry matrix by working with the cacao and oil-palm industry.

Activities:

Development of primers and real-time qPCR assay to detect critically endangered species in West Africa using eDNA. Enable rapid and cost effective species detection and monitoring. Rapidly assess the nation-wide distribution of these critically endangered species using eDNA. Allowing us to decide where on-going targeted conservation actions should be implemented. Assess the relative cost and time and results efficacy of eDNA as a critically endangered species monitoring tool in West Africa. Provide proof of concept needed for organizations to employ a similar strategy with other species

Period of activity: 01/02/2017 - 01/02/2018

Use of Funds:

Funding will be spent on developing primers and probes from published mitogenomes specific to the amplification of short mtDNA sequences for the target species. Once this is done, an assay will be optimized for species detection using real-time qPCR which will initially be tested using DNA from captive animals and a known positive control site (Hana River, Taï National Park). We will then assess the distribution and abundance of the target species by taking eDNA samples (water) throughout 25 Protected areas (PAs) in Cote d'Ivoire. This data will then be compared to that obtained from both on-going ecological surveys and local knowledge (focus-group interviews). Alongside evaluations of cost for method implementation, utilize quantitative models to evaluate the efficiency and efficacy of eDNA as a tool to monitor these species. This study will not only outline novel applications of eDNA in conservation management (rapidly assessing critically endangered species distribution), but will also be the first application of eDNA in West Africa and the first detection of pygmy hippo or of any crocodylian globally. This funding will validate the use of eDNA in these environmental and conservation contexts whilst providing critical data to enhance the management these endangered species.

Lemur conservation and community programs in northern Madagascar—Erik Patel, Ph.D., Lemur Conservation Foundation and Research Associate, FIU Tropical Conservation Institute:

Description of Lemur Conservation Foundation's *In-situ* Conservation Programs in Northeastern Madagascar

A variety of community conservation and research programs have been initiated by Lemur Conservation Foundation (LCF) in the SAVA region of northeastern Madagascar. These programs are briefly summarized on our website: <http://www.lemureserve.org/madagascar/> The goal of these projects is to support human livelihoods to reduce dependence on forest resources while improving biodiversity conservation through lemur research, forest monitoring, and ecotourism infrastructure. LCF collaborates with the national park service and local non-governmental organizations in forest bordering communities near two protected areas: Anjanaharibe-Sud Special Reserve (ASSR) and Marojejy National Park. *In-situ* programs reflect LCF's mission statement. LCF "is dedicated to the preservation and conservation of the primates of Madagascar through managed breeding, scientific research, education, and art." Importantly, LCF's conservation programs in Madagascar are inspired by and consistent with the recent IUCN Lemur Action Plan (2013), which is a 185-page document outlining a strategy for the conservation of the lemurs of Madagascar: <https://portals.iucn.org/library/sites/library/files/documents/2013-020.pdf> This document has been summarized and published as short paper in Science (Schwitzer et al., 2014). The article points out that lemurs are now one of the most endangered groups of animals in the world (according to current

IUCN categories) and emphasizes three programs which are most critical for their conservation: 1) Ecotourism, 2) Long-term research sites, 3) Community management of forests and local guide associations.

Since 2015, LCF maintains an office in Sambava, Madagascar which is managed by several full-time staff members, and over a dozen local residents who are hired on a project-specific basis. Currently, LCF support ten major projects, which are described below:

1) Population, Health, and Environment (PHE). An influential article about Madagascar by one of the leading conservation biologists pointed out that “Human population growth is one of the primary drivers of biodiversity loss.” (Harris et al., 2012). Indeed, the United Nations predicts population doubling in Madagascar by 2050. LCF collaborates with nurses from Marie Stopes to increase access to voluntary family planning services in underserved remote villages near ASSR and Marojejy. LCF’s role is to facilitate the visits by the nurses by coordinating with local health workers in the village and providing transportation and salary to the nurses.

2) Ecotourism. Tourism is an important way in which local residents can receive income by protecting lemurs. Lemurs are actually much easier to see in the wild than many other wild primates, as they habituate quickly to humans. At key sites, tourists frequently hire porters, cooks, and guides from small villages near the reserves. The project has established a new tourist and research campsite inside ASSR, called Camp Indri. The site now contains considerable basic infrastructure including running water, dining pavilion, toilet and shower buildings, covered tent shelters, and more. This is only established campsite in the entire 280 sqkm reserve. Critically endangered silky sifakas (*Propithecus candidus*) and Indri (*Indri indri*) are found near this camp.

3) Reforestation and Forest Restoration: Illegal selective logging for wood for home construction, fuel-wood, and charcoal are growing threats to ASSR and Marojejy. Reforestation can reduce such anthropogenic disturbances in lemur habitats while also generating local income. Two reforestation projects are underway and the forest restoration project is in the planning stage. Reforestation projects utilize a variety of fast growing native trees as well as cash crops. In Befingotra village, near ASSR., the project has established a tree nursery which employs several members of the forest police (“CLP’s”). This nursery is also partnered with the local primary school. A second project is underway just outside the city of Sambava in partnership with a local ngo called RANOALA (English translation: water and forest) which operates its own tree nurseries. The forest restoration project is in collaboration with Missouri Botanical Garden (MBG) and awaits permits. The goal is to restore the far northern region of Marojejy National Park which has been impacted by slash-and-burn agriculture in recent years.

4) Malagasy PhD Student: Fostering the development of Malagasy people as future conservation leaders and researchers in Madagascar is critical. Foreign researchers are expected to work with and support Malagasy students. LCF currently supports a Malagasy PhD student named Jo Rakotoarison. He has already been working with the project for more than 1 year, and is a full-time student in the Department of Biology at the University of Antananarivo, Madagascar. Currently he is developing his dissertation proposal and establishing his graduate committee. Jo’s project will involve a line-transect population survey of the lemurs in ASSR at multiple sites. Credible recent population densities for many lemur species are not available. There has never been true population density determination for any of the eleven species of lemurs within ASSR.

5) Fresh Water Fish Farming: Bushmeat hunting of lemurs has dramatically increased in Madagascar over the past 10 years, and there is much interest in alternative sources of protein for villagers. In collaboration with a local ngo called “APPA” (acronym which stands for in English: Association of pisciculture producers in Andapa region), the project maintains a model fish pond (established several years ago) and will be establishing a new pisciculture project in Andasibe Mahaverika village. With fish breeding expert Mr. Guy Tam Hyock, the project exclusively breeds a locally endemic species which has become very endangered called “fony” (*Paratilapia polleni*). The goal of this project is 1) to create an alternative source of sustainable protein to reduce bushmeat hunting of lemurs 2) improve children’s health as protein deficiency has been documented, 3) create a new source of income generation, 4) reestablish wild populations. This is a complex and multi-faceted project but essentially involves the establishment of new fish farming associations in villages. LCF provides the materials and training to develop the

new ponds, but local communities manage these ponds themselves. Private ponds for single families are also developed in some cases. This project also results in the legal establishment of fishing season (closed for several months of the year) in local waterways and other new laws regulating sustainable fishing (such as fines for fishing with mosquito nets with very small holes that kill juvenile fish).

6) Fuel Efficient Cook Stoves: Logging for fuel-wood and charcoal threatens lemur habitats. Inefficient, traditional cooking methods exacerbate this problem because wood/charcoal is wasted. In collaboration with the Swiss-based NGO ADES, the project sells fuel-efficient “rocket” stoves (for wood or charcoal) at-cost to local communities near ASSR and Marojejy. After several years of investigation with different stoves, it has become clear that these are the best available stoves in Madagascar. Tremendous positive feedback and high demand from villagers for these stoves has confirmed their quality. Not only are they sturdy and long-lasting with a true clay interior and metal housing, they require approximately 60% of the wood or charcoal to cook one cup of rice compared to traditional stoves.

7) Environmental Education: It can be difficult to change the attitudes and behaviors of adults, but children, if exposed to meaningful environmental education activities, can become outspoken conservationists. Large and rare lemurs such as silky sifakas and indri are literally breath-taking to observe. One of LCF’s most effective programs is the 3 days/2 nights structured visits to Camp Indri with up to 13 primary school students from Befingotra village. This village is adjacent to the park entrance but so few of the children have ever been inside the primary rainforest or have seen the really large silky sifaka and indri lemurs which are critically endangered flagship species. The project has created several gorgeous color posters in Malagasy (anti-bushmeat hunting and ASSR overview) which are displayed in schools and public spaces.

8) Forest Monitoring and Supplies for Park Rangers: ASSR and Marojejy are enormous mountainous rainforests, in total covering more than approximately 830 sq. km. There are less than fifteen park rangers, lacking the resources to effectively monitor such challenging terrain. This project organizes and funds forest monitoring missions with park rangers, local forest police, and our team members. Typically, these last 3 to 5 days and focus on the Camp Indri forest where long transects (~ 3 km each) are established. The project also provides park rangers and forest police with needed equipment such as boots and raincoats.

9) Support for Antanetiambo Nature Reserve: This is one of the only nature reserves in northern Madagascar created by a local Malagasy resident named Desire Rabary, one of our closest collaborators. One family group of northern bamboo lemurs (*Hapalemur occidentalis*) is easily observed here, and they have become a growing destination for tourists. Mr. Rabary is one of the most sought after research (and tourist) guides in this region. He was awarded the Seacology Prize in 2010 and earned several weeks in the USA as well as \$10,000 USD award. This short film summarizes his work:

https://www.youtube.com/watch?v=gu33LgqWIA8&feature=player_embedded

The project’s model fish pond is found here and managed through this reserve. Currently, the project supports a full-time forest guardian who lives inside the reserve. One of the three community libraries which LCF supports is found here, where English classes are taught.

10) Sustainable Agriculture: Slash-and-burn agriculture is perhaps the greatest threat to lemur habitats. Farming techniques and desirable crops that do not require slash-and-burn are badly needed. In collaboration with the NGO CARE, this project supports yam planting training. These yams are extremely large, up to 40lbs., and can be easily grown on extremely degraded land where even rice will not grow. Yams are also highly nutritious and can serve as a substitute for manioc or cassava which can be toxic if not soaked for long periods of time (not the custom in this region). Yams, as a vine with a huge tuber, are also known to be much more cyclone resistant than manioc shrubs.

MacArthur Foundation Grant 106560-0: Plant Red List Assessment for the Lake Victoria Basin

Initiated 2015, with final workshop to be held during 2018. 2017 marked the final phase of the plant red-listing process.

Research proposal:

1. RATIONALE

This proposal from the Rare Species Conservatory Foundation on behalf of the East African Plant Red List Authority, a volunteer network of the Species Survival Commission (SSC), seeks to prevent or reduce biodiversity loss, specifically plant diversity, and ecosystem degradation and to sustain ecosystem services for human wellbeing in the Lake Victoria Basin.

The Lake Victoria Basin holds a diverse range of vascular plant species, including endemics, and habitats that provide regionally important watersheds. The current portfolio of Important Biodiversity Areas will benefit from a comprehensive analysis of regional plant diversity including locations of endemics and regionally threatened plant species. Plants provide a wide range of vital resources to rural populations in addition to the important ecological services provided by forest habitats.

This project proposal addresses the loss of plant diversity through the following activities:

1. Application of the IUCN Red Listing process to the flora of the Lake Victoria Basin to provide an assessment of biodiversity loss (specifically plant extinction patterns), priorities for species conservation and complementary data for plants to add to the Important Biodiversity Area analysis for the Lake Victoria Basin.
2. The project will pull together the first regional assessment for plant conservation needs in the Lake Victoria Basin. This provides a stronger data set for protected area planning in the Lake Victoria Basin.
3. The proposal will build and strengthen the regional network of plant conservationists.
4. The produced Red List of Threatened Plants will provide a basis for reviewing protection measures for threatened wild plants in the Lake Victoria Basin.
5. Under collected sites/locations of important plant diversity in the Lake Victoria Basin will be identified and two will be subject to field survey.

The Lake Victoria Basin is undergoing massive changes in land use and the expansion of large-scale agriculture e.g. oil palm plantations. In addition the surviving habitat areas are under increasing threat from small-scale agriculture, wood and charcoal harvesting etc. Under projected scenarios for climate change there is an imperative to retain watersheds (e.g. upland forest areas) as services that can buffer water supplies during fluctuating rainfall regimes.

The project serves the MacArthur Foundation's Conservation and Sustainable Development (CSD) strategy and to the specific grant guidelines for the Lake Victoria Basin. The project directly serves **The Foundation's overall goal for the Great Lakes region to prevent or reduce biodiversity loss and ecosystem degradation and to sustain ecosystem benefits for human wellbeing.**

The project will deliver the objectives of the Great Lakes Initiative through the following activities:

Understand and respond to increased environmental pressures from development and climate change impacts

1. Using the IUCN Red Listing process identify priority plant species and areas for conservation and develop data sets that can be used for protecting and restoring biodiversity and ecosystem services and provide a reference for monitoring the impacts of climate change and development.

2. Identify and plan for the conservation of plant diversity in the Lake Victoria Basin and identify, maintain and expand Key Biodiversity Areas and Climate Resilient Altitudinal Gradients.
3. Using a selected study site within the Lake Victoria Basin to work with stakeholders to explore the links between biodiversity, ecosystem services and expected changes caused by development and climate change.

Assist the rural poor in managing their resources for multiple benefits

1. Focus will be given to plant groups that have a traditional and indigenous value, notably medicinal, food, crop wild relative species.
2. Using a selected study site within the Lake Victoria Basin to work with stakeholders to explore the links between biodiversity, ecosystem services and expected changes caused by development and climate change.

2. PROJECT OR PROGRAM DESCRIPTION

SCOPE

The Plant Red List Assessment covers the plant diversity and associated habitats of the Lake Victoria Basin and is focused on using Red Listing as a tool and resource for understanding and responding to biodiversity loss driven by economic development and climate change impacts. Specifically the project will develop a data set, IUCN red list of vascular plants for the Lake Victoria Basin that will directly guide the conservation of high biodiversity watersheds, landscapes and priority sites.

The thematic focus is the conservation of plant diversity and plant resources. The Red Listing of vascular plants for Eastern Africa is progressing but not completed. To date the East African Plant Red Listing Authority has assessed 1600 plant species. This project will assess 450 plant species, an estimated 10% of the Lake Victoria Basin. The candidate species will comprise endemics and regionally restricted and threatened species. This evaluation will allow for the better identification of Key Biodiversity Areas and the identification of Important Plant Areas.

Wild plant resources provide basic and fundamental services to rural communities. The vegetation of the Lake Victoria Basin is essential for providing a range of key ecosystem services to the 30 million inhabitants of the basin, these include the supply of timber (for artisanal and commercial use), charcoal, medicinal plants, wild vegetables, bush meat, and importantly the regulation of watersheds. These benefits to rural communities are being threatened by habitat clearance for timber extraction, mining and intensive agriculture.

TARGETS AND OUTCOMES

The overall goal of the project is to produce an assessment of the conservation status/extinction risk for 450 plant species that will provide guidance on priorities for species and habitat conservation. The long-term goal is to conserve the plant diversity and ecosystem services of the Lake Victoria Basin.

The primary conservation targets are the threatened and endemic plant species of the Lake Victoria Basin. Currently the portfolio of Key Biodiversity Areas does not adequately reflect plant diversity.

The longer-term outcomes for this project include:

- Accurate data driven assessment of species status that is used to guide species and habitat conservation investments
- Red List assessments are adopted as working tools by government institutions and conservation groups to develop conservation and resource management strategies that reduce biodiversity loss and sustain ecosystem services
- Key Biodiversity Areas, and specifically Important Plant Areas, in the Lake Victoria Basin are protected, with opportunities taken to restore natural capital for the benefit of biodiversity and human communities.

- Plant diversity data is included in regional biodiversity assessments.

CONTEXT

The Lake Victoria Basin contains the largest lake in Africa and supports around 30 million people, with a population growth over 6% per year. The forest habitats of the Lake Victoria Basin have suffered massive loss and still are threatened by wood fuel harvesting, with a large proportion of the rural populations in the region using wood fuel for domestic energy needs. Illegal logging is also prevalent in the Lake Victoria Basin. There are projected increases in new areas of intensive agriculture that threaten key habitats e.g. palm oil.

Red Listing undertaken to date by the East African Plant Red List Authority has identified a large number of taxa threatened with extinction within Eastern Africa. 1669 taxa have been assessed in eight workshops, 59% of the species assessed using the IUCN criteria are threatened with extinction (VU, EN and CR). However, very few of the species in the Lake Victoria Basin have been assessed (*circa* 30 to date).

A study by Kalema and Beentje (Conservation Checklist of the Trees of Uganda, Royal Botanic Gardens, Kew 2012) identifies species of conservation concern:

- *Uvariadendron magnificum* Verdc. Endangered. A Ugandan endemic restricted to the Lake Victoria Basin, recorded from two disjunct localities, Kasyoha-Kitomi Forest Reserve and Lutoboka on Sese Island. Threatened by forest loss, oil palm expansion and tourism development.
- *Diospyros katendei* Verdc. Critically Endangered. Only known from a single collection in the Kasyoha – Kitoma Forest Reserve in 1987. Possibly Extinct.
- *Ficus katendei* Verdc. Critically Endangered. Known from only two collections, one from Bwindi and the other from Kasyoha-Kitomi Forest Reserve.
- *Gomphia mildbraedii* (Gilg.) Verdc. Critically Endangered. Known from only three historic collections, two from the Democratic Republic of Congo prior to 1913, one from Uganda in 1941.
- *Encephalartos equatorialis* P.J.H. Hurter. Critically Endangered. Cycad endemic to one unprotected site in Uganda, Thruston Bay, less than 400 wild plants survive, threatened by collecting and habitat loss.
- *Senecio navugabensis* C. Jeffrey. Extinct? Endemic to Lake Nabugabo, not seen for years, may be extinct.

A number of widespread species have undergone significant declines largely because of over-harvesting; these include *Dalbergia melanoxylon*, *Warburgia ugandensis*, *Prunus africana*, *Vitellaria paradoxa* and *Lychnodiscus cerospermus*.

While the Lake Victoria Basin contains a significant and regionally important set of plant diversity the distribution and status of the flora has not been adequately incorporated into regional analyses and the identification of Key Biodiversity Areas, Alliance for Zero Extinction sites and Climate Resilient Altitudinal Gradients. Given the economic importance of wild collected plant products to the 30 million inhabitants of the Lake Victoria Basin we propose that this study is essential to the conservation planning of the region.

Plant conservation is historically under resourced in Eastern Africa and this project will provide a valuable opportunity to consolidate professional linkages between plant conservationists and will provide the necessary information to support plant conservation initiatives involving government entities and importantly guide environmental impact assessments linked to natural resource extraction e.g. oil and mineral.

Tropical evergreen forest has suffered extensive clearance in the project area, this reducing habitat for a wide variety of species, promoting local extinctions and reducing ecosystem services to local communities. This loss of natural capital has been particularly marked in Uganda and Rwanda with their high population densities and history of intensive agriculture.

External factors that could influence the delivery of the project include access to research permits for work in Uganda and Tanzania. We have excellent relations with the relevant authorities and do not anticipate any problems.

We are concerned about political instability spreading into the Lake Victoria Basin and its impact on travel and fieldwork.

STRATEGY AND ACTIONS

Botanical diversity has traditionally been under valued and under assessed for African regional conservation initiatives. To ensure that data derived from plant conservation assessments are incorporated into regional reviews we need to undertake a regional Red Listing initiative for the Lake Victoria Basin. This will allow the incorporation of plant data into regional conservation planning and ultimately into national conservation measures within the Lake Victoria Basin. Effective plant and habitat conservation will be profoundly hampered without this investment.

This project will fill an important gap in the analyses used to produce the MacArthur Foundation Conservation Strategy for the Great Lakes Region of East and Central Africa and provide information to guide conservation at the species and habitat level. The Red List assessment will provide a list of species that can be incorporated into national legislation and go towards national delivery of the Global Strategy for Plant Conservation. To proceed we need to know how many plant species are threatened with extinction, where are they and what is the status of their wild populations.

Project Deliverables

- Red List Assessment of endemic plant species (450 species including the 109 plant species used in the regional analysis of KBAs in the Lake Victoria Basin.)
- Red List Assessment of threatened non-endemic plant species (150 species)
- Review of Key Biodiversity Areas and Climate Resilient Altitudinal Gradients based on Red List results
- List of Alliance for Zero Extinction sites in Lake Victoria Basin
- List of potential Important Plant Areas for Lake Victoria Basin
- Field Assessment of two under collected and poorly known Key Biodiversity Areas/Important Plant Areas
- Management plan for a selected Key Biodiversity Area/Important Plant Area or CRAG with a specific focus on securing biodiversity and ecosystem services.
- Regional workshops and outreach events with local universities, conservation groups etc.

Project Outcomes

- Significantly improved understanding of the conservation status and distribution of the threatened and endemic plant diversity of the Lake Victoria Basin, the first regional assessment for the Lake Victoria Basin
- Strengthened regional identification of Key Biodiversity Areas
- Better national and regional recognition of the area's unique biodiversity
- Improved capacity for regional conservationists, foresters, communities and land managers.

Project Work Plan

Objective 1: Increase use and access to sound scientific information (Red Listing of Plant Species) to guide management actions to reduce the loss of biodiversity

Activity 1. Establish project steering committee, all existing and active members of the East African Red List Authority. Initial meeting to be tagged onto first Red List workshop. PY1 Q 1.

- Mr. Quentin Luke (Kenya), Principal Investigator and Project Manager, chair of the East African Plant Red List Authority
- Dr James Kalema (Uganda),
- Dr Henk Beentje (Netherlands), Research Associate, Royal Botanic Gardens, Kew
- Dr Roy Gereau (USA) Missouri Botanical Garden, USA

- Dr Mike Maunder (UK), Tropical Conservation Institute, College of Arts and Sciences, Florida International University
- Dr Paul Reillo, (USA) *Ex Officio*, Executive Director of the Rare Species Conservatory Foundation and Co-Director for the Tropical Conservation Institute, Florida International University

Activity 2. Undertake a comprehensive review of existing plant conservation status resources, conservation plans etc for the Lake Victoria Basin and geo-referencing of herbarium records. PY1 Q 1.

Activity 3. Hold regional planning meeting with other MacArthur Lake Victoria Basin grantees to coordinate activities (Quentin Luke to attend). PY1 Q 1.

Activity 4. Undertake three workshops in Entebbe for the Lake Victoria Basin. Geo-referenced data from regional and international herbaria will be incorporated into SIS project database and analyzed using the protocol developed and tested by the East African Plant Red List Authority.

Workshop 1. PY1 Q 1. Regionally threatened species (150 species). 10 participants representing the steering committee and 6 invited regional botanists. Student and faculty participation from Makerere University at all workshops will be encouraged. Craig Hilton Taylor from SSC Red List Unit will participate in first workshop.

Workshop 2. PY1 Q 2. Regionally Endemic Plant Species (225 species). 10 participants representing the steering committee and 6 invited regional botanists. Student and faculty participation from Makerere University at all workshops will be encouraged.

Workshop 3. PY1 Q 3. Regionally Endemic Plant Species (225 species). 10 participants representing the steering committee and 6 invited regional botanists. Student and faculty participation from Makerere University at all workshops will be encouraged.

Activity 5. PY1 Q 4. Submit results from Workshop 1, 2 and 3 to IUCN Red List Office. Review undertaken by IUCN office (*circa* 2 weeks work by Red List Office).

Objective 2. Undertake field survey of Important Plant Areas in the Lake Victoria Basin with aim of securing under recognized areas of conservation importance. PY1 and PY2.

Activity 6. Undertake Field Survey of 2 poorly documented sites (PY1 Q 4 and PY2 Q 1). Based on data produced by workshops field investigations will be undertaken for two sites that hold poorly documented plant diversity and are likely to represent a Key Biodiversity Area and/or Climate Resilient Altitudinal gradient. Each field survey will comprise one week in the field with a total party of *circa* 5 people. Student and faculty participation from relevant regional conservation agencies and universities will be encouraged.

Objective 3. Incorporate Plant Red List assessments into regional conservation analyses and strengthen regional capacity for conservation

Activity 7. Produce analysis of Red List Assessments to review new and existing Alliance for Zero Extinction sites, proposed Important Plant Areas and Key Biodiversity Areas (PY2 Q2).

Activity 8. Concluding one-day workshop with University of Makerere on plant conservation issues and priorities in the Lake Victoria Basin (PY2 Q4).

Activity 9. Produce report on plant conservation in Lake Victoria Basin to be published by SWARA, the magazine of the East African Wildlife Society (PY2 Q 3).

Objective 4. Improve management of an important biodiversity site through incorporating scientific information on plant diversity conservation into the management of ecosystem services.

Activity 10. Undertake a study of the conservation management of a selected site (likely to be a candidate Important Plant Area or Key Biodiversity Area) to establish improved management for biodiversity and ecosystem service conservation (PY2 Q2).

We plan to promote the red listing at the World Conservation Congress in 2016 and the IUCN/SSC Chairs Meeting in 2015. The red list will contribute to the ongoing Global Tree Campaign of FFI, BGCI and IUCN. We plan to publish at least one review paper in an international conservation journal (e.g. *Oryx*).

We will maintain close communications with other MacArthur grantees and plan for an annual planning meeting to coordinate activities.

MONITORING AND EVALUATION

We will monitor and evaluate project implementation and delivery against the following criteria/indicators:

Performance Indicator 1: Number of documents and other sources reviewed and consulted for information on plant diversity status in the project area

Performance Indicator 2: Number of existing IUCN assessments reviewed and incorporated into SSC database.

Performance Indicator 3: Number of new IUCN assessments made for the Lake Victoria Basin.

Performance Indicator 4: Number of Important Plant Areas identified.

Performance Indicator 5: Number of Alliance for Zero Extinction sites identified.

Performance Indicator 6: Number of Important Biodiversity Areas with added plant data.

Performance Indicator 7: Number of economically and culturally important plant species that are Red Listed.

Performance Indicator 8: Number of proposed new Climate Resilient Altitudinal Gradients

Performance Indicator 9: Number of peer reviewed scientific publications

Performance Indicator 10: Number of popular press and outreach events

Performance will be reviewed by the project management team on a quarterly basis.

3. ORGANIZATIONAL CAPACITY

The Rare Species Conservatory Foundation (RSCF) has a focus on the conservation management of threatened species and has a long history of engagement with conservation in East Africa. In particular the RSCF has been working on the conservation of East African montane habitats and in particular the conservation and recovery of the East African bongo.

The East African Plant Red List Authority was established in 2005 with a mandate from the SSC/IUCN to undertake Red Listing in the East African region and to support the regional implementation of the Global Strategy for Plant Conservation. The group has 14 active members who coordinate activities with 8 Eastern African countries and are drawn from the top regional botanical institutions (e.g. University of Addis Ababa, University of Nairobi, Makerere University, University of Dar es Salaam, Juba University, National Herbarium of Rwanda, National herbarium of Burundi, National Museums of Kenya, National Herbarium of Tanzania and the Okapi Wildlife Reserve in DRC); in addition there are 3 external members from extra-regional institutions (Royal Botanic Gardens, Kew; Missouri Botanical Garden and Florida International University). The project steering committee includes internationally recognized experts on the flora of East Africa.

To date eight workshops have successfully assessed over 1600 plant species. This group is one of the most active groups within the SSC and has developed significant expertise in Red Listing. The group has a detailed and intimate knowledge of the East African flora.

The East African Plant Red List Authority is based in Kenya (Nairobi) and is chaired by Kenyan national, Mr. Quentin Luke, a Research Associate of the National Museums of Kenya and recognized authority on East African botany and plant conservation. The Rare Species Conservatory Foundation and the East African Plant Red List Authority have not previously received funds from the MacArthur Foundation.

The Project will maintain close communication with IUCN (Red Listing of Lake Victoria Aquatic Biota), Bird Life and other potential MacArthur grantees to ensure efficient operations and sharing of information. Through Dr James Kalema we will maintain a close working relationship with the University of Makerere and will encourage faculty

and student engagement with the project. The East African Wildlife Society will be a key partner and will publish a project summary in their journal *SWARA*.

We will invite participation in the site conservation management plan from KENWEB, a regional wetland conservation group and the Ugandan Wildlife Society, a national partner of the East African Wildlife Society (EAWLS). A member of the Florida International University tropical wetland team will participate in this workshop.

The IUCN/SSC Red List Office in Cambridge (UK) will be a key collaborator. Dr Craig Hilton Taylor will join the first workshop and will act as liaison for the inclusion of the assessments into the official IUCN Red List.

All field activities will be dependent upon receiving the appropriate permits from national scientific agencies.

4. INTELLECTUAL PROPERTY (WORK PRODUCT)

The project will deliver a variety of materials including published reports, research studies, data sets, posters etc. We plan to use the East African Wildlife Society magazine *SWARA* as a venue. We will buy copies for free distribution to the audience in the region. Members of the East African Wildlife Society receive *SWARA* as a benefit of membership a relatively small number of copies are sold retail in the region. The Red List assessments will be held on a public database by the SSC.

We will work with the East African Wildlife Society to promote the value of plant diversity.

5. INVOLVEMENT IN THE POLITICAL PROESS

The project plans NO direct involvement in the political process.

Please answer YES or NO. If your answer to any of the following questions is YES, please also indicate all of the sections where these activities are described in the proposal (including budget).

- *Do any of the activities of your organization include attempts to influence legislation, a specific legislative proposal not yet introduced; proposed treaties required to be submitted to the legislature for consent; referendums, ballot initiatives, and constitutional amendments placed on a ballot by petition? Please note that the term "legislation" includes legislation introduced in a legislative body. Legislative bodies include the US Congress or other national parliaments or congresses, state or provincial legislatures, or city/local councils. NO*
- *Will any of the requested project funds be used to communicate with members of a legislative body (or other persons who participate in the formulation of legislation) and state a position on specific legislation? NO*
- *Will any of the requested project funds be used to communicate with the general public regarding specific legislation and encouraging the public to take action with respect to such legislation? NO*
- *Will any of the requested project funds be used to prepare communications that would be considered to be a non-partisan analysis, study, or research (a full and fair analysis of the pertinent facts reflecting all sides of the issue that is made widely available to those on both sides of the issue) regarding specific legislation? NO*
- *Will any of the requested project funds be used to provide technical advice or assistance to governmental bodies or committees through testimony or other means regarding specific legislation? If yes, provide a copy of the previously received written request on behalf of the government body to provide the technical advice, such as a written invitation or letter from the government body that might request your organization or staff to testify before a legislative or congressional committee, or to provide assistance in reviewing or drafting legislation NO.*
- *Will any of the requested project funds be used to communicate with or educate members of a legislative body? If so, please explain. NO*

- *Will any of the requested project funds be used to participate or intervene in any political campaign on behalf of or in opposition to any candidate for public office (including publishing/distributing statements related to the campaign, paying compensation to campaign workers, conducting or paying expenditures connected with targeted voter registration drives, or making campaign contributions for candidates for public office)?* **NO**
- *Will any of the requested project funds be used to influence the outcome of any specific public election or carry on any voter registration drives?* **NO**

- **ADDITIONAL CONSIDERATIONS**

The project will take climate change into account in light of its potential impacts on habitats. The proposed project will not result in the resettlement or relocation of people. It is not anticipated that this project will result in the restriction of access to natural resources.

KEY PROJECT STAFF

QUENTIN W. LUKE (Kenya) is a botanist and conservationist with over 28 years experience in Africa. He has collected over 22,000 specimens and had 9 plant species named after him. Quentin's fieldwork has included Kenya, Tanzania, Uganda, Mozambique, Madagascar, Bioko, Sierra Leone, Mali, Democratic Republic of Congo, Ethiopia and Djibouti. Quentin has been closely associated with the conservation of the sacred Kaya forests of Kenya and is the founding Chair of the Eastern African Plant Red List Authority.

JAMES KALEMA (Uganda) is a botanist at Makerere University, Uganda, of remarkable field and herbarium experience. Trained at different times in conservation assessment by Kew, IUCN and National Museum Museums of Kenya, and in Biodiversity Informatics by Uganda National Council of Science and Technology under auspices of GBIF. Been assessing plant conservation status for eight years. A member of the Global Tree Specialist Group of IUCN and also serves on the East Africa Plant Red Listing Authority (EAPRLA). Participated in Implementation of the Global Strategy for Plant Conservation (GSPC) under JRS/Botanic Garden Conservation International (BGCI), with special emphasis on East African endemic and near-endemic taxa. Took part in the Vegetation and Climate change in Eastern Africa (VECEA) project, a joint project with the Department of Forest and Landscape, University of Copenhagen, Denmark. Participated in the design of Uganda's National Biodiversity Strategy and Action Plan (NBSAP) (under National Environment Management Authority) for implementation of the CBD. Currently involved in production of a Conservation Atlas of East African Acanthaceae: phytogeography and conservation, in partnership with the Botanical Museum of University of Copenhagen, Royal Botanic Gardens, Kew Herbarium and University of Dar es Salaam. Co-author with Henk Beentje of a Conservation Checklist of the Trees of Uganda. Member, Technical Committee on Biodiversity Conservation in Uganda; Man and Biosphere (MAB) Programme Committee of UNESCO in Uganda

ROY GEREAU (USA), received his Master of Science degree in Biological Sciences from Michigan Technological University in 1978, and has been employed by the Missouri Botanical Garden since 1983, where he is Tanzania Program Director. His African botanical experience began with a plant collecting trip to the Omo River in Ethiopia in 1984, followed by a short exploratory visit to Tanzania, where he has worked extensively ever since, conducting botanical fieldwork throughout Tanzania as well as in Cameroon, Congo (Brazzaville), Democratic Republic of Congo, Ethiopia, Kenya, and Uganda. He has worked in liaison with the National Herbarium of Tanzania to establish a network of resident collectors throughout the country. His research work combines an interest in botanical exploration and inventory, phytogeographic studies, description of new species and systematic revisions, species distribution modeling, delimitation of tropical montane ecoregions, climate change impacts on plant species distributions, conservation assessments of targeted species, ex-situ conservation of threatened species, development of botanical gardens, and promotion of indigenous species for home gardens. He has worked with Tanzanian colleagues to produce floristic checklists of the Lake Nyasa Climatic Region, Minziro Forest Reserve, and Gombe National Park, and is currently completing a floristic checklist of the Eastern Arc Mountains. He has been a member

of the Eastern African Plant Red List Authority (EAPRLA) since its formation in 2006, and has prepared the data for and participated in all eight EAPRLA plant conservation assessments workshops from 2006-2014. His 70 peer-reviewed publications include new Tanzanian species in the Annonaceae, Fabaceae, and Rubiaceae, the taxonomic revision of *Ancistrocladus* (Ancistrocladaceae), co-authorship (with Lovett, Ruffo & Taplin) of the *Field Guide to the Moist Forest Trees of Tanzania*, and authorship of the *Lake Nyasa Climatic Region Floristic Checklist*.

HENK BEENTJE (Netherlands) holds a PhD from the University of Wageningen, Netherlands, and has worked on African plant systematics and conservation since 1975. He is the author of 140 papers and books including 'Kenya trees, shrubs and lianas' and (co-authored) field guides to the palms of Madagascar, the trees of Burkina Faso and the mangroves of Africa. From 1997–2012 he was the editor of the Flora of Tropical East Africa at the Royal Botanic Gardens, Kew. Since 1999 he has been a member of the IUCN/SSC East African Plant specialist group (later Plant Red Listing Authority). He is fluent in English and Dutch, and his French is good. He has done fieldwork in seven Africa countries, and from 1984–1989 was employed at the East African Herbarium, National Museums of Kenya. From 1991–2013 he was employed at the Royal Botanic Gardens, Kew, from where he retired in 2013. He is currently engaged in Flora-writing, plant taxonomy, conservation Red Listing and working on various field guides.

PAUL R. REILLO (USA) received his Ph.D. from the University of Maryland (Zoology). Founder and President of the Rare Species Conservatory Foundation. Extensive fieldwork experience in North America, Caribbean and Latin America. Specialist focus on the conservation and recovery of threatened species with a special focus on forest antelope (bongo), neotropical primates and parrots. Field-oriented population biologist, ecological geneticist and environmental engineer. Technical expertise in field ecology, demographic and genetic analysis of small populations and animal husbandry.

MIKE MAUNDER (UK) is a conservationist and not-for-profit administrator serving as Associate Dean for Research Engagement, College of Arts and Sciences, Florida International University. Mike received his PhD in conservation genetics from the University of Reading. Mike has over 25 years experience in species and habitat conservation, conservation strategy and policy, institutional leadership and project management with extensive fieldwork and research experience in Middle East, Central and Eastern Africa, Caribbean and Pacific regions. Mike is a member of the East African Plant Red List Authority. Mike is a senior Editor for the international conservation journal *Oryx* and a founder board member of the Sheikh Mohamed bin Zayed Species Conservation Fund.

III. Conservation Education Activities

In 2017, RSCF maintained relationships with domestic and international zoological institutions and agencies, and again overhauled its extensive, free-access web site (www.rarespecies.org). The site links to many conservation and environmental organizations, presents RSCF's mission and scope for all audiences, and discusses conservation initiatives in detail. The site is updated regularly, and provides access to in-house and published scientific papers, program documents and urgent conservation topics and issues. RSCF also maintains a real-time social media presence (e.g., FaceBook, Twitter, Instagram). In addition, RSCF staff in 2017 presented lectures and seminars to scientific and lay audiences (e.g., local universities, nature centers, international conservation meetings and workshops), and RSCF's board members served as academic advisors for graduate-level university students. (*Please see discussion on RSCF's collaboration with Florida International University—Tropical Conservation Institute.*) During 2017, also RSCF continued sponsorship of the annual Caribbean Endemic Birds Festival on Dominica (see above).

IV. Media Development

In the course of implementing its conservation programs, RSCF generates a large amount of data, video footage, photographs, and technical narrative. Integral to the research effort itself, these materials also provide the basis for information sharing with scientific and lay audiences. RSCF compiles media resources into comprehensive reference

libraries of imperiled ecosystems and species, including images and event histories that document project timelines in their entirety. The more endangered the species, the more crucial the record. Project-site host governments are a further beneficiary of this media development initiative, many of them lacking the funds to document their own country's biological resources, and what is becoming of them.

RSCF partners draw upon raw material from RSCF's field research. Scientific media content is packaged for use by partners, and is seen in exhibits and educational materials suitable for diverse audiences (e.g., zoo visitors, students, professional educators, web site browsers, conservation organizations, governmental agencies). Findings are also shared with scientific colleagues through technical publications associated with *in situ* conservation initiatives, propagation and other activities. RSCF is also acutely aware of the need to expand media programs and adapt/translate materials for educators, students and researchers at field project sites. RSCF's programs and field material are featured regularly in popular print and film, in addition to scientific publications for professionals. For example, RSCF's instrumental role in creating the world's first new national park of the millennium was presented in *Wildlife Conservation*, *National Geographic*, and *Palm Beach Illustrated*. Similarly, RSCF's work has been highlighted on *CNN*, and *National Geographic Today*, and the Dominica Program was the feature story for *Jack Hanna's Animal Adventures* season premier entitled, "In Search of the Sisserou".

RSCF regularly contributes feature articles and research papers to technical and lay journals. Similarly, the 2003-2004 bongo repatriation effort was featured on *CNN*, *BBC*, network television, the *New York Times*, multiple web news services (including *National Geographic* and *Time Magazine for Kids*), and over 30 newspapers across the U.S., Canada, Europe and Africa. During 2005, RSCF assisted the British Broadcasting Corporation while filming on Dominica, part of a multi-year, many-island documentary of the natural and geomorphological histories of the Caribbean; this series reached U.S. and European markets during 2010-2011. During 2006, RSCF participated in a novel, mini-documentary website campaign sponsored by Lincoln-Mercury and Amazon.com, entitled "My Dream". See www.mydream.tv and the submenu "Give Back" / "Conserve an Endangered Species" to view the film and profile about RSCF programs. RSCF trustee Mark Davis, DVM compiled, directed and produced a multi-cultural wildlife documentary film, "Horns of Hope," which debuted in 2012 and has been shown in numerous public venues since. The film highlights the poaching plight of black rhino in Zimbabwe and a diversity of conservation and recovery strategies for Africa's premier flagship mammal species, including rhinoceros and bongo antelope; in addition it inspires environmental awareness through cultural, spiritual and scientific messaging.

RSCF's pivotal role in the Florida Grasshopper Sparrow Recovery effort (interim report to USFWS provided above) was featured as a cover story in the autumn 2017 issue of *Audubon* magazine. This controversial, urgent conservation effort was highlighted both to illuminate the many scientific, political and logistical challenges and to stimulate extramural, philanthropic investment—which has proven to be successful and significant. Federal and state agency funding for the sparrow program is at an all-time low, even as North America's most endangered bird approaches extinction in the wild.

Increasingly, social media has enabled RSCF to efficiently reach a broad audience with day-to-day video posts, staff blogs and contributions, photos, real-time dialogue with field staff, and related news stories both in print and online. Some RSCF-generated videos have gone viral, while other material has been archived by network news organizations and conservation-themed websites and advocates (e.g., Arkive.org). RSCF staff continue to present at several local, national and international conservation venues and participate in nature documentary filming. RSCF staff, research associates and program partners published in technical peer-reviewed journals, popular magazines, local and regional newspapers, and in online forums. Please see RSCF's website for a complete and historical list of reprints, press releases, links and related materials.

V. Facility expansion and post-hurricane recovery

Just weeks prior to devastating Hurricane Maria, Hurricane Irma impacted all of south Florida and wreaked havoc on the Conservatory, causing ~\$150,000 in infrastructure damage to enclosures, fencing, buildings, water and power systems and equipment. Thankfully, no animals were lost, but one male bongo suffered a broken humerus (which fully mended). While RSCF provided emergency assistance to Dominica, staff commenced debris removal and rebuilding of aviaries and life-support systems, which will continue for many months. Since September, RSCF has invested in substantial refurbishing and reinforcing of physical infrastructure and expanded office, laboratory and clinic space. These include expanded holding capacity for Florida Grasshopper Sparrows and improving management areas for two breeding groups of bongo antelope. The composition of the bongo herds has also changed as older animals senesce and become post-reproductive and new facilities (e.g., Texas Antelope Conservancy) come online.

Immediate and long-term facility goals include annexation and expansion of the Conservatory to include neighboring properties, addition of more hurricane-resistant support structures for staff, equipment and animals, reducing impacts from hurricanes (e.g., improved drainage, reduced large-tree wind load, off-grid power-supply system, off-grid water supply and purification systems, reinforced enclosures, additional bunker space for animal evacuation).

Digital Imaging: Thanks to a special grant, RSCF purchased a fully portable, Sound Eclin 1109G Digital Radiography System, to be shared cooperatively among local wildlife non-profit centers. The system comprises a suitcase-based computer and control system coupled to a digital imaging plate that allows both clinical and field-based x-ray imaging of small and large animals. Under an agreement with the Rainforest Clinic, based in Loxahatchee, patients from all local wildlife non-profits can benefit from the latest in digital x-ray imaging at no cost. In addition, the clinic provides an annual stipend to RSCF in consideration for providing digital imaging services to regular clients. This technology provides limitless, film-free, fast, fine-detail, images that can be enhanced, saved and shared among researchers and veterinarians. Diagnostics are maximized while handling time is minimized, significantly reducing patient stress. This digital radiography system was instrumental in guiding the full recovery of an orphaned bongo antelope calf, born with a broken distal metacarpal. The system has also been invaluable for diagnosing health issues in parrots and small primates since its deployment.

As a 25-acre facility, the Rare Species Conservatory represents the organization's international headquarters for wildlife conservation, which focuses on global biodiversity preservation. RSCF's interdisciplinary programs integrate applied field and clinical research on endangered species, propagation and management of critical, flagship species for repatriation and reintroduction, developing husbandry protocols for critical taxa, and implementing protected-area policies and strategies for long-term ecosystem conservation. RSCF also collaborates with scientific and governing authorities for wildlife in conservation hotspot zones, primarily in the tropics and neo-tropics, to develop tangible conservation solutions for imperiled species and habitats.

The Conservatory in Loxahatchee serves as a captive-breeding center and research complex, as it also provides a hub for international exchange and outreach to students, interns, collegial scientists and the general public. The Conservatory has become a technical hub for FIU's Tropical Conservation Institute (described above). Expanding facilities will significantly enhance RSCF's conservation mission both locally and internationally, and facilitate existing and future programs to protect and restore the world's highest priority wildlife and natural areas. Please see RSCF's website at for a detailed discussion about specific projects, organizational structure, conservation strategies and ongoing development campaigns.

APPENDIX A: Board of Directors

Paul R. Reillo, Ph.D., University of Maryland (Zoology). Field-oriented population biologist, ecological geneticist and environmental engineer. Rare Species Conservatory Foundation founder and president. Technical expertise in field ecology, demographic and genetic analysis of small populations and animal husbandry.

Richard D. Estes, Ph.D., Cornell University (Vertebrate Zoology). Behavioral zoologist and ecologist. Specialist in field studies of large African mammals. Species Survival Commission Chairman for Antelope Specialist Group of the World Conservation Union (IUCN); Earthwatch Scientific Advisor; Associate, Harvard Museum of Cultural and Natural History.

George Amato, Ph.D., Yale University (Biology). Director and Affiliated Professor, Sackler Institute of Comparative Genomics, American Museum of Natural History. Adjunct associate professor at Columbia and Fordham universities, research associate in the Ecology and Evolutionary Biology Department of Yale University. Conservation geneticist specializing in non-invasive sampling techniques for endangered species, and monitoring the trade in endangered species products using DNA-based forensic science.

Christopher Langen, Esq. Attorney, parrot enthusiast and conservation devotee, having traveled to 26 countries to view parrots alone. Fluent in four languages, and provides both legal counsel to RSCF and international program perspective and expertise.

APPENDIX B: Year-end, 2017 species list at RSCF, maintained under USDA, USFWS, and Florida FWC licenses

Iguana iguana (common green iguana)

Boocercus euryceros isaaci (eastern bongo)

Amazona rhodocorytha (Red-browed Amazon parrot)

Amazona vinacea (Vinaceous Amazon parrot)

Pionites leucogaster (White-bellied caique parrot)

Leontopithecus rosalia (Golden Lion Tamarin)

Leontopithecus chrysomelas (Golden-headed Lion Tamarin)

Cebuella pygmaea (Pygmy marmoset)

Aratinga guarouba (Golden conure)

Amazona imperialis (Imperial parrot)

Derophtus accipitrinus accipitrinus (Guyana hawkheaded parrot)

Pionites melanocephala (Black-headed caique)

Amazona brasiliensis (Red-tailed Amazon parrot)

Ammodramus savanarrum floridanus (Florida Grasshopper Sparrow)

APPENDIX C: 2017 RSCF Physical Plant Inventory

- 25 landscaped acres, property and tangible-tax exempt (Palm Beach County, FL), fenced and cross-fenced (1.6 miles 8' fencing, mostly hi-tensile; .75 miles 4' fencing, hi-tensile)
- 12 interconnected hoofstock paddocks, with 8' gates, loading corrals, pole barns for feeding stations, troughs
- 1.5 acre mixed-species area, with 40 flights, including 13 walk-in, landscaped enclosures.
- 12 additional free-flight aviaries and stand-alone primate enclosures.
- 30'x12'x10' zoomesh primate enclosure
- 5 hurricane-proof bunkers (including, weaning, evacuation and workshop rooms)
- 3 hurricane-proof small animal breeding spaces (Florida Grasshopper Sparrow)
- 13 soft-sided outdoor sparrow aviaries (for incoming wild birds and breeding pairs)
- aviary kitchen/ food prep room
- dishwashing building
- hay and grain storage buildings
- reverse-osmosis water purification system (separate building)
- Sound Eklin 1109G portable radiography system (housed at Rainforest Clinic)
- office/lab with nursery, veterinary clinic, surgery and quarantine (600 sq.ft.)
- personnel quarters, with separate intern/guest accommodation (1300 sq.ft.)
- meeting, staff-support and laboratory space (2000 sq. ft.), including rearing laboratory
- technical equipment (e.g., incubators, brooders, video, computers, tranquilizer equip., respirator, anesthesia)
- shop and tools (tractor, 3 all-terrain vehicles, bushhog, mower, trimmer, auger, sub-soiler, hand tools, welder, specialty fencing tools, plumbing, electrical supplies, rolling stock, 2 golf carts, etc.)
- backup diesel and gasoline generators—stationary and portable.