Sample Proposal

We are happy to provide you with a sample application and share our gratitude with Little Fireface Project for providing their successful proposal from 2017 as a resource for other applicants. The Disney Conservation Fund supports projects ranging in scale and scope, and this document is intended as an example of just one of many successful proposals.

IMPORTANT TO NOTE:
We have only included the information from the proposal section (Request Information Section on the application site) as a reference for you, as we thought this would be the most useful.

Some questions and formatting may have changed, so the current year's proposal may not be fully represented in this example.

***Project Title:**	Building Bridges for Loris Conservation
Principal Investigator Last Name:	Nekaris
Principal Investigator First Name:	Anna
***Requested Cash Amount:**	$49,600.00
Project State(s):	(Not Applicable)
Species (Common Name):	Javan slow loris

Species (Scientific Name):	Nycticebus javanicus
IUCN Species Status:	Critically Endangered
Connecting Youth and Families with Nature:	Yes
***Previous Project Funding:**	Yes
***In what years has this project been funded by the DCF?:**	2014, 2015, 2016
Project Description:	We will continue our long-term study of the CR Javan slow loris. Ability of slow lorises to persist in agricultural areas can be enhanced by canopy connectivity. We will place, monitor & evaluate loris bridges in our study area with an associated education programme for children & farmers. We will also genetically examine impact of population isolation. Advantages of both lorises & water hosepipe bridges to people should contribute to their long-term protection, decreasing predation & poaching.
Project Personnel:	Dendi Rustandi (Indonesian): LFP Manager; liaison with community leaders; organizes social event; ensures running of project; head tracker Ibu Wita (Indonesian): LFP Education and Survey Assistant; runs Nature Club and Forest Protector Book sessions; assists with nocturnal surveys in new areas especially with introducing the project to village heads Adin Nunur (Indonesian): LFP Project Tracker and Animal Welfare Officer; in charge of capturing and collaring slow lorises; tracker Aconk Zalaeny (Indonesian): LFP Head Teacher and Agroforestry Officer - due to his outstanding English skills acquired during his time with LFP, as well as his now studying to be a teacher and his lifelong work with his family's agricultural business, Aconk was promoted from being a tracker. Yiyi Nazmi (Indonesian): LFP Project Tracker, Camera Trap Monitoring Officer; checks and uploads data from all camera traps each month Rachmatt Khidayat (Indonesian): LFP Project Junior Tracker --conducts slow loris follows, sleep site surveys and aids with construction of tree nursery and bridges. Rachmatt was in 2016 trained in canopy access. Dr Mohamed Imron Ali (Indonesian): Scientific counterpart with Universitas Gadjah Mada; ecologist of multiple mammalian and bird taxa; provides access to various laboratories, provides student assistants for training and aids in project write up. Marie Sigaud (French): Research Coordinator based in Cipaganti; coordinates all research with Indonesian and foreign volunteers and students; in 2016 completed her PhD in spatial movements of mammals through an agroecosystem in rural Canada, and will apply her modelling skills to LFP Sharon McCabe (American): Field Station and Education Coordinator based in Cipaganti; manages all education projects, printing and data Abdullah Langgeng (Indonesian): Wildlife Trade Coordinator based in Cipaganti; Abdullah arranges and conducts weekly illegal wildlife trade surveys in markets and online and communicates results to the government and media Cao Xiang (Vietnamese): MSc student from Oxford Brookes University who will develop slow loris microsatellites for her MSc thesis. Vincent Nijman (Dutch): Professor at Oxford Brookes University; co supervisor of the PhD projects and affiliate of TRAFFIC SE Asia for market surveys Ibu Ena (Indonesian): Project cook and cleans house. Ibu Ena's children also regularly participate in Nature Club.
Partners:	JAVA Universitas Gadjah Mada: provides access to genetics and nutritional analyses labs; employer of project counterpart Department of Forestry, Garut: aids in training of farmers and development of agroforestry projects; aids in replanting schemes to prevent erosion Department of Wildlife Garut: aids in confiscation of illegal wildlife

Cikananga Wildlife Rescue Centre: aids in care of sick slow lorises

UK

Shaldon Wildlife Trust: Provides genetic samples for baseline analyses

***Is your Primary Investigator on the staff of an American Zoo and Aquarium (AZA)-accredited institution?:** No

Overall Conservation Program:

1. Nine slow loris species, unique nocturnal primates, inhabit Asia. The 2016 IUCN Red List assessed all as Endangered or Critically Endangered. Lorises are threatened due to habitat loss, but also are widely used as traditional medicine, photo props and pets, with social media fuelling the latter two issues making their conservation crisis a global issue. These unique primates are considered a Red Light species, in that captive populations are genetically unsustainable, partially due to the difficulty of keeping and breeding them in captivity; thus demand for pets means that wild stock is being eradicated. In 2007 LFP director Nekaris was a major participant in their transferal to CITES Appendix I. In 2011, Nekaris founded LFP due to a paucity of research on lorises in general, but also to mitigate problems stemming from an incessant trade. Not only has it been vital to gain wild population numbers and distribution, but also to stop rampant reintroductions, whereby well-meaning individuals released inappropriate species of often-sick lorises with no teeth, with no knowledge of their behavior and ecology, into the wrong habitat leading to the death of 100s of animals (Moore, et al., 2015).

We propose to continue this first-ever long-term study of a lorisiform primate -- the Javan slow loris (JSL). The CR JSL considered one of the Top 25 Most Endangered Primates in the World (Nekaris et al. 2016). Despite its protected status, JSL is still being traded, with trade moving from open markets to closed online groups (Nijman, et al., 2015). Long-term research sites are considered a major facilitator of species conservation. We chose our study site originally because it had among the highest densities of slow lorises based on a Java-wide survey, yet we were made aware of its location by poachers (Voskamp, et al., 2013). Incredibly since starting our study, we have become a hub to receive any loris seen as a pet, or even found in the 'wrong' place (e.g. when a farmer is cutting bamboo) (Nekaris, 2016). The project has now become an integrated part of the village, running annual festivals and becoming a steady source of employment. We continually promote importance of endemic wildlife through community conservation; improve captive management and translocations; measure and report wildlife trade; use social media to mitigate trade in slow lorises.

Since April 2012, we have collected >7000 hours of behavioral data on 59 identified individuals, with 8 pairs followed continuously. We have observed 1-2 offspring per year from these pairs and studied dispersal. In 2012, we studied ecology of loris venom; did island-wide surveys of Java; in 2013, we focused on infant development, and occupancy modeling surveys of Garut District; in 2014, we completed the first quantitative study of food intake and nutrient analysis. In 2015-6, we conducted the first study of torpor in a wild primate outside of Madagascar. In 2016, we examined the unique ultra-sonic communication of slow lorises, and how they use it along with cognitive mental maps to navigate their large home ranges of 10-20 ha. We run monthly surveys for exploited wildlife both in markets and online. We developed an education program, including quantitative long-term assessment of knowledge of children in 31 schools; focused learning in our village Nature Club, and in January 2015 we built a school; that is home to our Nature Club and tree nursery, for which we have developed protocols, a test plot with input of farmers. In 2016, we implemented an agroforestry project to help mitigate climate change and develop economic opportunities for farmers.

Specific components: In 2017-2019, we want to continue our long-term study, with a focus on using our detailed knowledge of the ranging of our long-term pairs to examine and mitigate the impact of fragmentation on our relatively isolated population of JSL. We will create and install an optimal network of 'slow loris bridges' to improve canopy connectivity, doubling as important and useful hosepipes for farmers. As wildlife bridges are becoming more important as forests becoming increasingly fragmented, we will analyse as many aspects as possible about implementation and use of the bridges and make them available via our web site for use by other conservation projects. To increase pride in slow lorises and their continued protection by farmers and their children, we have developed a 'Building Bridges for Slow Loris Conservation' Pride Pack -- including practical farming materials (e.g. seedlings and hose pipes) as well as t-shirts, stories and games about each individual slow loris family. Based on our new collaboration with the Universitas Gadjah Mada, we also can for the first time examine the genetic relatedness of our population of slow lorises, not only from a social perspective, but also to know the impact of isolation of forest patches on this threatened species.

Project Goals and Objectives:

Some goals of our project are ongoing --the very nature of our project and the long lives of slow lorises mean that certain methods must stay the same from year-to-year. Additional goals include examining fragmentation from a behavioral and genetic perspective and developing a new conservation education program with this topic at its heart.

Goal 1: Continue to assess the impact of living in a changing agroforest on slow loris behavior

Objectives

1a. We will continue our nightly radio-tracking regime of 8 slow loris pairs and their dispersing offspring, with an aim to have a minimum of 24 animals continuously monitored.

1b. Using our long-term dataset in association with annual SPOT archive GIS maps of habitat change in the area (2012 to present), we will examine how changing crop systems have impacted loris ranging (size and travel distance) and behavior (level of activity), as well as dispersal patterns.

1c. We will continue to monitor covariates for behavior related to habitat, including climate variables taken within microhabitats and at our base station, and by maintaining monitoring of phenological plots.

1d. We will continue to monitor thermoregulation and activity of slow lorises by applying small accelerometers and temperature loggers to their radio collars.

1e. Using our long-term ranging database, we will identify hotspots of slow loris ground use as a basis to install slow loris bridges, comprised of waterhoses that also serve to irrigate farmers' fields.

1f. We will passively monitor the 'first use' and frequency of use of bridges through the use of camera traps and passive microchip readers.

Goal 2: Assess the genetic impact of isolation on our slow loris population and populations within Java, and determine the genetic basis of social organization.

2a. To develop species-specific microsatellite primers of slow loris species, with special attention to N. pygmaeus, N. javanicus, and N. bengalensis using Next Generation Sequencing technology to construct a genomic library

2b. To test for polymorphism of selected microsatellite loci in various captive individuals from Shaldon Wildlife Trust, UK

2c. Using the developed primers, to examine the within population variation of ~30 Javan slow loris individuals studied in Cipaganti, West Java, since 2011, and for which we have samples available, including understanding family lineages.

2d. Using the developed primers, to examine between population variation of West and Central Javan populations of Javan slow lorises that are geographically isolated, and between two once interlinked populations of slow lorises in West Java (Cipaganti and Cikuray) that have been genetically isolated for approximately 100 years.

Goal 3: We will continue our agroforestry programme by providing seedlings to farmers to improve the functioning of ecological systems and to provide a corridor for wildlife.

1a. We will continue to grow seedlings in our dedicated nursery.

1b. We will monitor growth and survival of seedlings already planted

1c. We will continue a honey production program as well as develop a slow loris coffee product line to assist the livelihoods of local farmers.

Goal 4: We will continue to monitor and estimate the trade in slow lorises and other wildlife in markets and on the Internet with an aim to make the data available to all relevant authorities.

Objectives

4a. Monthly market visits to continue monitoring illegal trade at 10 selected markets on Java and Bali that we have visited for the last six years.

4b. Report results of trade to the authorities, local newspapers and TRAFFIC the wildlife trade monitoring network and publish the work in international journals.

4c. Continue to monitor loris and other trade (e.g. civets) on social media (from online videos, photos, and private loris & civet pet owner groups)

Goal 5: Engage the community with the slow loris bridge project and roll it out to neighboring communities with an education campaign

5a. During our already established weekly-assessed Nature Club (Klub Alam) sessions, children aged 4-16 will play a major role in developing and monitoring the slow loris bridges, including helping to build them and helping go through footage of the camera traps.

5b. Klub Alam children will also work in the LFP nursery to grow trees to supplement the bridges to improve connectivity. From collecting seeds to watering saplings, children will ultimately plant their own tree in the home range of the slow loris family that lives on the land of the child's human family; for children who are not from farming families, they can grow trees for their 'favorite' slow loris.

5c. Klub Alam activities will focus around our Pride Pack. We will tell the story of one of our lorises from our 8 long-term families, and assess associated activities using a combination of free listing and cultural consensus techniques to assess behavioral and attitude change. These stories will includes unique drawings of our 8 slow loris families, with aspects of their unique behavior, personalities and their ecological roles.

5d. We will engage in activities to integrate the bridge project within the local adult community. During biannual farmer focus groups with associated Pride Days (week long activities including sports, song, dance), adults will be kept informed of the project via slide shows and discussion of data collected. Farmers will discuss the impact of new hosepipes. Distribution materials (stickers, banners, t-shirts, monthly newsletters, calendars) will ensure we reach all community members.

Goal 6: Continue to disseminate information collected in our study to improve the lives of captive lorises worldwide and to educate the general public about their plight to reduce demand for international trade.

Objectives

6a. Make protocols and identification keys available via the Internet in multiple languages.

6b. Work with captive facilities to taxonomically identify loris species and determine best husbandry practices.

6c. Edit a series of videos containing the entire slow loris ethogram in order to allow our methods to be used by researchers working on lorises in captivity and the wild.

6d. Use our social networking sites and public talks to generate awareness through newsletters, memes, photos, videos, and published research.

Project Outcomes :

Number of acres protected over baseline (acres):	500
Number of animals in project focal area over baseline (population increase over one year, if applicable):	2
Number of animals reintroduced into the wild:	10
Number of people engaged through community conservation outreach programming:	5000
Number of people reached by conservation messaging:	1000000
Percent of people who are likely to change behavior to protect threatened species based on their experience with conservation programming (%):	25

Research Methods: Goal 1: Assess the impact of living in a changing agroforest on slow loris behaviour

The vital importance of pristine forests for preservation of global biodiversity remains uncontested. Yet in a world increasingly dominated by humans with their ever-growing demands for agricultural products, an understanding of wildlife's ability to survive and even thrive in agricultural environments is becoming vital (Bhagwat et al. 2008; Estrada et al. 2012; Stafford et al. 2016). Farming systems that are intercropped by hedgerows or living fences of trees have often been regarded as vital contributors to alleviation of fragmentation (Michel et al. 2006). For forest specialists, human constructed corridors have been shown to be important habitats, making up parts of forest dwelling animals' home ranges and as dispersal vectors (Schlinkert et al. 2016). For tropical mammals, such studies have lagged behind, but are now necessary as pristine habitats disappear at an alarming rate.

Wildlife crossings are built to provide a safe connection between fragments for animals living in fragmented habitats. For example, the edible dormouse lives in European beech and oak forests, playing a key role in seed dispersal. Its dispersal abilities are low and habitat disturbance can cause isolation, genetic drift, interbreeding and extinction (Fietz et al 2014). The development of green bridges along road passageways in Germany, The Netherlands, France and Switzerland proved to be successful for not only the dormouse, but also ground beetles, grasshoppers, spiders, mice, voles, and shrews to travel safely to areas of forest (Georgii et al 2011). In Australia, rope bridges were installed for the Critically Endangered western ring-tailed possum (Yokochi and Bencini 2015). The bridges were monitored by infrared cameras, microchip readers and optical sensors. Habituation of the rope bridges was swift with the western ring-tailed possum using the bridges after 7 to 17 months (Yokochi and Bencini 2015). Similarly Wilson et al (2007) documented the use of bridges by the ring-tailed possum, and noted that rope bridges need to be monitored for many years to assess patterns of use and seasonal changes. Rope bridges with wooden ladder steps were established in Porto Alegre, Brazil in areas where brown howler monkeys were killed from electrical power lines and roads. Camera traps were placed at each bridge to record usage and local people were trained to observe the bridges. Howler monkeys, white-eared opossum and porcupine used the overpasses (Teixeira et al 2013). In India, canopy bridges made from bamboo poles were installed for gibbons living in fragments. This material is abundant and inexpensive as well as being minimally disruptive to the forest (Das et al 2009). We already know that slow lorises use waterlines in our area, and want to expand this useful connective resource that is also beneficial to local people.

Using our existing dataset collected continuously since April 2012 in combination with satellite imagery of the area and geo-referenced maps of farming practices collected by LFP, we will select sites for the installation of at least 16 hose pipe bridges (2 per pair). We will install a camera trap at one end of the bridge and a passive microchip monitoring system at the other end in order to examine: first use of the bridge and frequency of bridge use. Camera traps will allow us also to see other animals that use the bridges. We have piloted this method successfully on one already installed hose pipe bridge and found that it is regularly used by slow lorises, common palm civets, arboreal climbing mice and several bird species. We will integrate the bridge use into our wider study of resource selection by slow lorises. We will continue to examine how slow lorises change their behaviour in accordance with land change in the core study area belonging eight long-term focal pairs. To assess slow loris habitat selection behaviour and identify key habitat components, we will use Resource Selection Functions (RSFs) where habitat characteristics at observed locations are compared to random locations that define habitat availability (Johnson et al., 2004). During weekly surveys, each time a slow loris is observed, the LFP team collect data about its habitat (i.e., tree species; number of trees in a 10x10 meter plot; tree diameter at breast height; leaf coverage). We also collect data at random locations. We will use mixed-effects logistic regression to parameterize the RSF, with "individual" as random intercept. The robustness of each model to examine these varying parameters will be assessed using k-fold cross validation. We will then carry on with data collection to document changes in loris behavior over the next two years in the context of how they change their behavior and habitat choice when 'loris friendly' plants are planted more widely and if they seem to select the offered bridges or not.

We now have more than 16 months of data collected on temperature regulation in slow lorises in the human landscape, for which we received funding from Disney Conservation Fund in 2015. By understanding the physiological ramifications of cold temperatures on slow lorises, we cannot only understand better the impact that living at higher altitudes has on these primates, but also can transfer this knowledge to climate change scenarios. Continuing this work is important because for the Javan slow loris in particular, less than 10% of Java's rainforest remains, largely restricted to altitudes above 800 m (Nijman, 2014). Java experiences a tropical climate resulting in drastic variation between lowland and montane temperatures, where temperature decreases at an average of 0.6 °C for every increased 100 m asl (Whitten, 1996)--reaching a maximum of 28°C by day with a an average minimum of 13°C by night in Cipaganti, West Java.

We will continue to observe Javan slow lorises with our established methods, ranging in various microclimates. Through non-invasive research techniques, we will attach external weetag temperature loggers to Biotrak radio-collars. Nightly behavioural observations will take place six nights per week (17:00-23:00, 23:00-05:00). We will examine activity budgets in relation to data recorded by the temperature loggers, and relate this to microclimate data collected at phenology plots. We will monitor phenology plots in each loris pairs' home range, where we have erected HOBO-U23 climate loggers to collect measurements of temperature (°C) and relative humidity (RH%) for microclimate comparison. We will continue to observe and analyze the effects of climate, altitude and disturbance on loris behavior, thermoregulation and home ranges.

Goal 2: Assess the genetic impact of isolation on our slow loris population and populations within Java, and determine the genetic basis of social organization.

Despite being urgently required for conservation management, little is known on Nycticebus population genetics and no microsatellite markers have been characterized. Microsatellites, special repetitive DNA sequences, are popular and useful genetic markers for conservation genetic studies (Yu et al., 2011) due to their high mutation rates and co-dominance among individuals (Liu et al., 2015). We will characterise first-ever species-specific microsatellite markers for slow lorises undergoing a series of molecular methods following Macdonald et al., 2016, which is cost-effective and rapid by using Next Generation Sequencing (NGS). Identification of polymorphic microsatellite loci will lead to far-reaching applications such as identifying individuals and species, inferring parentage, mating systems, demographic structure, dispersal, hybridization events, and phylogenetic history in slow loris populations (Clission et al. 2000, Yu et al. 2011).

Our long-term collaboration with Shaldon Wildlife Trust, which recently imported wild-caught slow lorises confiscated from trade in Hong Kong, means we can develop microsatellites in the UK. Once developed, we can apply them to our wild population through our collaboration with the University of Gadjah Mada (UGM), which houses an excellent genetics lab, precluding the need to export samples.

To develop the microsatellites, a qualified veterinarian will collect DNA samples during health checks of captive slow lorises from small blood samples saved on Whatman FTA cards. Once the microsatellites are developed, non-invasive buccal swabs or hairs from wild individuals will be used. We will compare level of inbreeding (and relatedness) within our study population, and compare them to populations on a neighbouring mountain Cikuray (isolated for ~100 years) and Kemuning forest UGM field site in Central Java to examine heterozygosity across their range.

Genomic DNA will be isolated using a DNeasy Blood and Tissue Kit. One sample will be used to screen microsatellite fragments using NGS. Total DNA will be sequenced on an Illumina HiSeq Rapid run at The Oxford Genomics Centre. The obtained sequence is quality-controlled using the programs Trimmomatic (Bolger et al., 2014) and Musket (Liu et al., 2013), and the sequence reads are assembled using SOAPdenovo2 (Luo et al., 2012). Microsatellite markers will be 'fished out' directly from genomic library and specific for species. Designed primer pairs will be selected for amplification and screening. To assess the amplification success and polymorphism of the newly designed microsatellites, all specimens are used for genotyping. PCR condition for each primer pair will be tested and optimized. Amplified fragments will be analyzed using an ABI DNA Sequencer and genotypes will be determined using GeneMarker software. Allelic variation at the microsatellite loci will be determined as number of alleles per locus and heterozygosity.

Permits to carry out the work have been granted by Indonesia's RISTEK.

Education Methods: Goal 5: Engage the community with the slow loris bridge project and roll it out to neighboring communities with an education campaign

We will integrate the slow loris bridges in our weekly Klub Alam (Nature Club) sessions. For example, will engage children in the actual construction of the bridges (for example rolling out the long hose pipes). We also will bring camera trap footage and ask children to identify animals and allow them the simple pleasure of watching the animals use the bridges. We will also integrate the bridge program into our LFP nursery. At the end of each bridge, we will plant an appropriate number of saplings to allow the lorises somewhere to go at the end of the bridge (or a better habitat there), and children will be allowed to grow saplings for their chosen loris family. We will use methods already proven successful from our Forest Protector program to assess education materials for this program.

We have designed a "Building Bridges Pride Pack", intended for use by Indonesian children aged 8-12 years. The pack includes a set of materials revolving around our 8 long-term slow loris families, with every family represented by its matriarch and a unique symbol featured on t-shirts, school supplies, colouring sheets and a short story for each family. Nekaris wrote the text to include several key concepts (Wells & Zeece, 2007): Javan slow lorises pollinate plants, eat insect pests, use social learning, have family bonds, and are only found in Java, especially in Garut District. The stories are charming and non-threatening to introduce children for the first time to a unique native species in a factual but entertaining way (Wells & Zeece, 2007). Other than the names of the animals, we avoid anthropomorphism while focussing on behaviours of slow lorises to which children could relate (Ganea, et al, 2014).

Although our main focus is to use the Pride Pack in our Nature Club, we also will use a modified version in at least 10 schools in areas adjacent to our village where slow lorises can disperse (within 8 km). In each weekly session in Nature Club, children will keep a 'feeling' journal, asked at the beginning of each session to write down the first ten words that come to their mind when they think about slow lorises. In neighbouring schools, two sessions will be conducted, whereby children will be asked to write an initial and final essay.

To examine the data, we will enter all data into the programme NVIVO to obtain a complete list of terms used by children. We will extract all nouns, adjectives, verbs, and adverbs, removing "filler" words that are irrelevant to the study (such as definite articles and pronouns); in the analysis we refer to this reduced list as 'words'. We will convert the words into free-list data by entering each respondent's usable words into a .csv file in the order that they were written. We will generate descriptive data on the 'word diversity', which is the number of distinct terms listed by the whole population, and the 'word count', which is the total number of words listed, regardless of repeated words (Puri, 2011).

We will apply cultural domain analysis to the collected data (Schrauf & Sanchez, 2008). First we will examine the presence or absence of a coherent domain in each class in each condition ("initial" and "final" for the neighboring schools; monthly for the Klub Alam). We will create an item-respondent matrix for each school and condition, which will consist of binary presence and absence data for each term listed within that group. We will analyse these matrices individually with minimal residuals factor analysis using the programme UCINET 6, producing eigenvalues and factors. A ratio of 3:1 or greater of the eigenvalues of the first and second factors indicates domain coherence within that group (Schrauf & Sanchez, 2008).

We will next examine changes in group coherence within the same group across conditions (Comrey & Lee, 2013). For each respondent, in each of the conditions, we will calculate a mean frequency score that represents their "level" of knowledge within their school group. To calculate the mean frequency score, we separated respondents into groups based on their school and condition and within each group we will give items a frequency score (the number of times that each item was said in that group). We then will give respondents in that group a 'mean frequency score' by taking the average of the frequency scores of each item that that respondent listed. Higher mean frequency scores in this case are an indicator of increased domain coherence within a group.

To examine overall changes across conditions, we will use Smith's saliency index to calculate the change in saliency scores of all shared items between initial and final conditions of each school (Schrauf & Sanchez, 2008). To create Smith's saliency index, we will subtract the initial saliency score from the final saliency score, with scores furthest away from zero (in either direction) representing the terms whose saliencies changed the most between conditions. A negative value indicated that an item's saliency decreased from initial to final and a positive value represents an increase in saliency (Puri, 2011).

To simplify the analysis across schools, we will examine the factors resulting from the minimum residuals factor analysis to see if they form natural groups (Puri, 2011). The shifting distributions of these categories across conditions indicate changes within shared knowledge and cultural competence of respondents within a cultural domain (Heinrich, et al., 2009). To explore how these changes may affect overall learning, we will analyse the frequency of terms within each category during the initial and final conditions across all schools.

We will examine resulting story or list content and change in categories across conditions to assess presence of evidence that our respondents are able to apply their knowledge, rather than memorising facts only. By using the criteria for learning levels within the Cognitive Domains of Bloom's Taxonomy, we developed a set of conditions to reflect achievement of various levels of learning. We will use increase in the relevant factor or direct evidence from respondents' essay or list to provide presence/absence data indicating that respondents in our population had reached higher levels of cognitive complexity (Rule & Lord, 2003). We will use the non-parametric Wilcoxon Signed Rank test to examine differences across conditions. The University Research Ethics Committee in the Faculty of Humanities and Social Sciences at Oxford Brookes University approved our research. The protocols followed the ethical guidelines proposed by the Association of Social Anthropologists of the UK and Commonwealth.

We will engage in activities to integrate the bridge project within the local adult community. During biannual farmer focus groups with associated Pride Days (week long activities including sports, song, dance), adults will be kept informed of the project via slide shows and showing of films of the slow lorises on the bridges. Comedy films are popular in Indonesia and already we have filmed many funny clips of lorises on the bridges -- such as when they meet a civet face to face and the animals have to negotiate around one another. Farmers of course will have a choice to have a bridge implemented on their land. As bridges provide vital irrigation to their crops in the form of water houses but on average cost the equivalent of a three months salary to erect, a number of farmers have already indicated the desire to have a hose pipe bridge erected on their land. We will interview farmers every three months about the impact of hosepipe bridges on their crops. Because we want farmers to be happy with the bridge and keep it into the future, we can discuss moving them to locations that suit farmers and lorises and modifying materials and length. Distribution materials (stickers, banners, t-shirts, monthly newsletters, calendars) will ensure we reach all community members.

Conservation Methods:

Goal 3: We will continue our agroforestry programme by providing seedlings to farmers to improve the functioning of ecological systems and to provide a corridor for wildlife.

We have produced a detailed document for our tree nursery protocol, with associated data sheets that can be analyzed with parametric statistics in terms of growth, diversity, success and yield. We will also engage in monthly focus group meetings with farmers. We feel that questionnaires in our area are limited as people are inclined to answer that they think you want to hear. Through freely talking and recording responses (including free-listing techniques similar to our education program analysis) and categorizing responses in relation to the participants' age, gender, schooling, etc. (all of which are already kept on record in NVivo) we feel that we can more accurately measure trends in attitudes and perceptions over time. In this way we may ensure that all stakeholders are benefiting from this important program. Success will particularly be measured by increased yield to farmers; increased planting of essential wild-life friendly crops; successful yield of honey and associated income; and continued surrender of any slow lorises seen in captivity to the project team for release. We will continue to have monthly meetings with the Forestry Department, as it is vital that we keep them engaged in planting and honey production schemes. These are already programmes they have wanted to roll out but lack the man power and are happy to assist us in these schemes.

Goal 4: We will continue to monitor and estimate the trade in slow lorises and other wildlife in markets and on the Internet with an aim to make the data available to all relevant authorities.

We now have a dedicated Wildlife Trade Coordinator -- Abdullah Langgleng, who is in charge of sending all data to the Forest Department, and who also writes articles for local and national newspapers to inform about the problems of illegal wildlife trade. We will continue monthly market visits to monitor illegal trade at 10 selected markets (e.g. Garut, Jakarta, Sukabumi, Bogor, Tasik Malaya, Denpasar, Cianjur, Ciamis, Bandung, Surabaya) on Java and Bali that we have visited for the last five years. As part of our long-term project, we regularly visit major cities and towns for supplies, visa requirements and for attending local conferences and training of local students, normally on a monthly basis. Each town visit will be accompanied by a survey in the location's bird markets (Pasar Burung). Not only will we continue to take data on slow lorises, but also on other illegal species (birds, reptiles, mammals), on other primates (especially long-tailed and pig-tailed macaques), and on civets (common, masked, small-toothed, otter) and sugar gliders as the latter two groups have seemed to replace slow loris as the animal of choice in the illegal pet trade; we are also recording data on owls, certain key bird species and new trends in trade (for example in the last year deep friend monitor lizard sate has become trendy). Information will be collected by Indonesian-speaking team members on the species, its origin, its potential destination, its price and its use. We will also continue to monitor loris and other trade (e.g. civets) on social media (from online videos, photos, and private loris & civet pet owner groups). Data on welfare of these animals also will be collected. Report results of trade to the authorities, local newspapers and TRAFFIC the wildlife trade monitoring network and publish the work in international journals. We collect data as we walk on a mobile phone or write the data down afterwards. Data include: species, price, origin, and condition, as well as any other information provided by the vendor (such as its use or anecdotes about its behavior). Data are analysed with non-parametric statistics, diversity indices (such as Shannon Weiner, Evenness). We never purchase animals.

Goal 6: Continue to disseminate information collected in our study to improve the lives of captive lorises worldwide and to educate the general public about their plight to reduce demand for international trade.

Our project has a very large media presence. Not only do we update Facebook, Twitter, Instagram, Pinterest and YouTube on at least a weekly basis, but we also have revamped our web site to include as many downloads as possible to share freely the results of our studies with as many stakeholders as possible. We record metrics of our posts and downloads and reach several thousand people per month. We are regularly in the media. In 2017 BBC3 will produce a documentary at our field site as well as a film crew from the University of Exeter. Indonesian Trans7 also plans to visit the field site to make a film for Indonesian television after two previous successful visits. Indeed, one focus of their film is on the winning of the Disney Conservation Hero Award by Manager Dendi Rustandi.

Another focus of the next year is to use our large video and photograph collection to make an online YouTube Repository of the entire ethogram of the slow loris for students and researchers to use. Such a repository will unify and make comparable slow loris studies in the future and be more directly understandable than a written publication.

We also disseminate our work to the scientific community. In the last year, project director Nekaris lead the writing of all the Red List assessments for Asian lorises. She is also the advisor to the Prosimian Taxon Advisory Group for Europe. Recent PhD graduate Francis Cabana is the main advisor for the nutrition of slow lorises in WAZA zoos. Nekaris also helped to lead a campaign in Japan to change the laws about keeping CITES I listed species as pets. Currently CITES permits do not expire, and can be passed on to new animals illegally smuggled from the wild, but this law is set to change. Field data from LFP were vital for this change since we could show the changes in age of Javan slow lorises, which were first never legally imported into Japan, but also, since they are not kept in captivity, baby lorises were portrayed as 10-year old animals. LFP field photos proved that babies were being displayed with false CITES permits. This is one example of how we use our field data to improve international policy.

From a publication perspective, our project averages at least 20 international publications a year. This year we will edit the first ever edit volume on loris conservation and ecology for Cambridge University Press intended for an academic and a popular audience. We also produce at least 20 presentations a year at national (Indonesia/UK) and international conferences. We also will continue to provide volunteer opportunities at our site for Indonesian students to improve capacity for their knowledge of native wildlife.

Animal Welfare: LFP takes into account the welfare of each individual we observe in the wild and at the participating rescue centres. Research has shown that blue LED lights can degrade the retina of primates; to prevent any interference when conducting observation we use next generation non-fluctuating LED head torches with red filters. During observations we minimize stress by maintaining a 5-10 meter buffer between the observers and the focal animal. To maintain natural behaviors and to reduce the feeling of being "chased" we have a protocol allowing focals 10 minutes to settle into a new location before we move to observe them.

We are sensitive to animals being photographed or people using flash photography in the forest at night. Photographs of people at night are taken in general when no loris is present. Photographs of lorises are taken with an off-camera flash at 1/1000th of a second. The minimum number of photographs needed is taken. In addition we ask staff and volunteers not to use their phones or other bright lights during loris observations, to speak quietly and refrain from making 'scary' noises.

Catching: Lorises are caught by hand, with an experience climber climbing a tree and placing the loris into a catch bag where it can be calm. A tarp is placed on the ground and all equipment is laid upon it ready to measure and weigh the loris. The radio collars and external temperature loggers used during this project collectively weigh 19 grams, which is less than 2 % of the body weight of Javan slow lorises. To attach these collars we use minimal restraints; animals are not anaesthetised. Trained staff insert a microchip into any newly caught animal. Once we have attached the collars, taken physical measurements, and documented any medical conditions, lorises are released on the same tree where they were found within 20 minutes. A medical kit is brought to every capture (indeed all staff and volunteers carry a medical kit at all times); this kit includes an epipen should the venomous loris bite a member of staff. All procedures have been approved by the Committee for Animal Ethics at Oxford Brookes University following the guidelines of the Animal Behavior Association.

When we conduct market surveys, we are not allowed to interfere with the welfare of the animals. If we see an animal with no water, we assess the situation and may inform the vendor to provide the animal with better conditions. We never purchase animals. When dealing with translocations, we provide step-by-step best practive guidelines to rescue centers. We encourage post release monitoring, pre release health checks, and detailed assessment of habitat of the proposed release site. We discourage multiple individuals to be released in the same place or and discourage release of infants.

We provide taxonomic identification too to zoos and other captive institutions. We also provide best practice guidelines for husbandry to help prevent illness, obesity and tooth decay.

Animal Type: Primates

***Project Start Date:** 10/01/2017

Project End Date: 10/01/2019

Geographical Coordinates: 7°16’44.30 ”S, 107°46‘7.80 ”E

Photo Upload: Lorises-096.jpg

Social Media Pages: Web site: www.nocturama.org Facebook: https://www.facebook.com/LittleFirefaceProject/ Twitter: https://twitter.com/littlefireface Instagram: https://www.instagram.com/littlefireface/ YouTube: https://www.youtube.com/user/littlefireface Pinterest: https://uk.pinterest.com/queenfireface/ Etsy shop: https://www.etsy.com/uk/shop/LittleFirefaceShop

Timetable: 2017Timetable Little Fireface Project Building Bridges for Slow Loris Conservation.pdf

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Background Upload: 2017NekarisCVShort.pdf

Budget : DCF_Annual_Grants_Budget_Template2017Nekaris Sheet1.pdf

ACH Payment Information: ACH authorization form_CLE ZOO SOC.pdf

Letters of Support - Old: No

Please upload the Progress report (if applicable):: DCF_Progress_Report_TemplateNekaris.pdf

W9 Form:

Budget template for DCF Annual Conservation Grants
Insert additional lines as needed.
Please provide justification for requests either as a separate document, or within the "Notes" column.
Please save as a PDF document before uploading to your application in Cybergrants.

Disney Conservation Fund
Annual Conservation Grants

Date: 17-Feb-17
Organization Name: Little Fireface Project; Cleveland Zoo and Zoo Society
Project Title: Building Bridges for Loris Conservation
Granting Period: Note, if awarded funding, DCF funds will support activities starting in October of the current year. The grant term is two years.

Budget Category	Description	Unit Cost (USD)	Number of Units	Total (USD)	Requested Disney Support	Additional Funding Sources (Pending, In-Kind)	Notes
Salaries							
Salary Manager	monthly salary plus one month bonus for Ramadan	225	26	5850	5850		Salaries are the hardest aspect to find funds for, yet are vital for the running of the project
Salary Trackers x 3	monthly salary plus one month bonus for Ramadan	160	78	12480		2017 funded by PTES; seeking further funds next year	
Salary Education Officer and Nursery Manager	monthly salary plus one month bonus for Ramadan	185	26	4810	4810		Request funding for this new position vital to the current project
Salary part-time education and survey assistant	monthly salary plus one month bonus for Ramadan	85	26	2210		Funded by Amersfoort Zoo	
Salary Field Station Coordinator	monthly salary	225	24	5400		Funded Cleveland Zoo	
Salary Research Coordinator	monthly salary	225	24	5400		Funded Cleveland Zoo	
Salary Wildlife Trade Officer	monthly salary plus one month bonus for Ramadan	160	26	4160		Funded by Cleveland Zoo	
Salary Public Relations Outreach Officer	monthly salary	225	24	5400		Funded by Augsburg Zoo	
Staff Development	staff exchanges for other projects for training	500	10	5000		Funded by Cleveland Zoo	For staff to get a better understanding of the diversity of conservation projects
Salary field station cook	monthly salary plus one month bonus for Ramadan	100	26	2600		Funded by LFP volunteer programme	
Subtotal salaries				50710	10660		
Travel expenses							
two annual round trip flights + internal travel to Java	for Nekaris and Nijman	1250	4	5000	2500	one set of travel provided by Margot Marsh Biodiversity Foundation	
coordinator flights to Java and for visa runs		1400	4	5600		Funded by Cleveland Zoo	
visas and research permits for coordinators		800	4	3200		Funded by Cleveland Zoo	
travel within Java	car rental, bus journeys for market surveys, supply runs, etc	2000	2	4000	2000	Half funded by Cleveland Zoo	Cleveland Zoo has funded travel for market surveys
Subtotal travel expenses				17800	4500		
Field & Lab supplies							
Line item for each category of items							
20 Biotrack radio collars	17 g radio collars for slow lorises	240	40	9600	9600		collars on our slow lorises need to be replaced regularly or we cannot follow them
upkeep of project motorbike & household	oil change, petrol etc	30 per month	24	720		Funded Cleveland Zoo	
repair and replacement of broken equipment	on average each year permanent project equipment needs replacing or repairing at about $1500 per year	1500	2	3000		funded by Shaldon Wildlie Trust and Cotswolds Wildlife Park	
microchips	mini microchips	55	40	2200		Donated by Shaldon Wildlife Trust	to mark slow lorises
batteries, replacement sd cards, and other consumables	in our previous budgets we spent about $750 per year on these types of consumables	750	2	1500		Augsburg Zoo	batteries for activity loggers, GPS, camera traps, ibuttons, etc (most rechargeable but need to be replaced every few years); replacement charger
bushnell camera traps with new SD cards	to place at the end of loris bridges	190	20	3800	3800		
AVID Industrial stationary pass through microchip reader	to place at the end of loris bridges	225	20	4500	4500		can tell us which lorises use the bridges and at what time
honey production supplies	hive construction; beekeeping clothing; honey smoker	5000		5000		funded by Columbus Zoo	to develop loris friendly honey industry in the village

Subtotal Field Supplies				30320	17900		
Laboratory expenses							
Chemicals for genetic analysis	DNeasy Blood and Tissue Kit 50 preps (Qiagen, Germany) @ $160	160	1	160		requested Mohamed bin al Zayed Conservation Fund	
	Absolute ethanol Merck Millipore 1L @$45	45	1	45		requested Mohamed bin al Zayed Conservation Fund	
	RNA later 500ml (Ambion, Austin, TX) @$405 x 4 bottles	405	4	1620		requested Mohamed bin al Zayed Conservation Fund	
	RNase (Qiagen) 2.5ml @$215	215	1	215		requested Mohamed bin al Zayed Conservation Fund	
NGS library	NGS (estimation based on Oxford Genomics Centre price) @$1625	1500	900	600		requested Mohamed bin al Zayed Conservation Fund	
Genotyping	Includes PCR primer price, chemicals, dye, sequencing per sample	20	60	1200		requested Mohamed bin al Zayed Conservation Fund	
Subtotal Laboratory Expenses				3840			
Meetings & workshop expenses							
June 2018 pride days	stage hire, entertainment hire, soccer field preparation, prizes	3000		3000	3000		
January 2019 pride days	cooking competition, talent show stage hire, prizes	1500		1500		funded by Margot Marsh	
June 2019 pride days	stage hire, entertainment hire, soccer field preparation, prizes	3000		3000	3000		
Nature Club materials	monthly photo copies and supplies	100		1200		funded by NaturZoo Rhein	
mobile outreach	banners	15	12	180	90		
bi-monthly farmer workshops	snacks, handouts, newsletters, gifts	200	12	2400		funded by Margot Marsh	
Annual calendars for two years	for distribution at workshops etc	1.75	1500	2625	2625		production of annual calendar for outreach
education materials	Pride Pack for Building Bridges sessions; posters, booklets, tshirts, stickers	2500	2	5000	2500	requested for Year 2; Columbus Zoo funds year 1	The Pride Pack will allow children & parents to get to know slow lorises as individuals to build empathy
regional agroforesty workshop	major meeting with stakeholders	3500		3500		funded by Margot Marsh	transport, accommodation, venue rental, materials
annual wildlife trade meeting	focus group discussion on trade	1200	2	2400		funded by Cleveland Zoo	
Subtotal meetings & workshop expenses				24805	11215		
Capital expenses	(less than 20k but a building expense)						
materials for waterlines		250	20	5000	5000		The waterlines can remain permanent structures to irrigate farmers' land
upkeep of waterlines		10	24	240	240		
Subtotal capital expenses				5240	5240		
Miscellaneous							
General operating costs	rent; electricity; village donations; internet; communication; domain name registration; Facebook post boosts; publication charges	4500		4500		funded by Cleveland Zoo, Etsy shop, Lush, and volunteer contributions	
Subtotal miscellaneous				4500	0		
Subtotal				133375	49515		
Indirect Costs/Overhead (not to exceed 10%)							
Total					**49600**	rounded to nearest $100	

Timetable Little Fireface Project Agroforestry and Javan Slow Loris Conservation

D=daily, W=weekly, M=monthly, Biannually =B

	Radio tracking	Loris collar checks	Farmer meetings	Agroforestry planting	Pride Days	Klub Alam	Market Surveys	Outreach Garut DT	Outreach Social Media	Genetic Analysis	Bridge Erection	Camera traps
Oct 17	W (6 days)	M	M	W		W	W	M	D	W	Erect	M (on rota)
Nov 17	W (6 days)	M		W		W	W	M	D	W	Monitor	M
Dec 17	W (6 days)	M	M	W	B	W	W	M	D	W	Monitor	M
Jan 18	W (6 days)	M		W		W	W	M	D	W	Monitor	M
Feb 18	W (6 days)	M	M	W		W	W	M	D	W	Monitor	M
Mar 18	W (6 days)	M		W		W	W	M	D	W	Monitor	M
Apr 18	W (6 days)	M	M	W		W	W	M	D	W	Monitor	M
May 18	W (6 days)	M		W		W	W	M	D	W	Monitor	M
Jun 18	W (6 days)	M	M	W	B	W	W	M	D	W	Monitor	M
Jul 18	W (6 days)	M		W		W	W	M	D	W	Monitor	M
Aug 18	W (6 days)	M	M	W		W	W	M	D	W	Monitor	M
Sep 18	W (6 days)	M		W		W	W	M	D	W	Monitor	M
Oct 18	W (6 days)	M	M	W		W	W	M	D	W	Monitor	M
Nov 18	W (6 days)	M		W		W	W	M	D	W	Monitor	M
Dec 18	W (6 days)	M	M	W	B	W	W	M	D	W	Monitor	M
Jan 19	W (6 days)	M		W		W	W	M	D	W	Monitor	M
Feb 19	W (6 days)	M	M	W		W	W	M	D	W	Monitor	M
Mar 19	W (6 days)	M		W		W	W	M	D	W	Monitor	M
Apr 19	W (6 days)	M	M	W		W	W	M	D	W	Monitor	M
May 19	W (6 days)	M		W		W	W	M	D	W	Monitor	M
Jun 19	W (6 days)	M	M	W	B	W	W	M	D	W	Monitor	M
Jul 19	W (6 days)	M		W		W	W	M	D	W	Monitor	M
Aug 19	W (6 days)	M	M	W		W	W	M	D	W	Monitor	M
Sep 18	W (6 days)	M		W		W	W	M	D	W	Monitor	M