Where:

W = Breaking energy in inch-pounds (in-lb),
F = Force in pounds (lb), and
P = Penetration in inches (in).

* * * * *

TABLE II—MINIMUM STATIC BREAKING ENERGY

[Joules (J) and Inch-Pounds (in-lb)]

Tire characteristic	Motorcycle		All 12 rim diameter code or smaller except motorcycle		Tubeless 17.5 rim diameter code or smaller and light truck		Tires other than light truck, motorcycle, 12 rim diameter code or smaller							
							Tube type greater than 12 rim diameter code				Tubeless greater than 17.5 rim diameter code			
Plunger diameter (mm and inches)	7.94 mm	5/16″	19.05 mm	3/4″	19.05 mm	3/4″	31.75 mm	1 1/4″	38.10 mm	1 1/2″	31.75 mm	1 1/4″	38.10 mm	1 1/2″
Breaking energy	J	in-lb	J	in-lb	J	in-lb	J	in-lb	J	in-lb	J	in-lb	J	in-lb
Load Range:														
A	16	150	67	600	225	2,000	.....	.....	.....	.....	.....	.....	.....	.....
B	33	300	135	1,200	293	2,600	.....	.....	.....	.....	.....	.....	.....	.....
C	45	400	203	1,800	361	3,200	768	6,800	.....	.....	576	5,100	.....	.....
D	.....	.....	271	2,400	514	4,550	892	7,900	.....	.....	734	6,500	.....	.....
E	.....	.....	338	3,000	576	5,100	1,412	12,500	.....	.....	971	8,600	.....	.....
F	.....	.....	406	3,600	644	5,700	1,785	15,800	.....	.....	1,412	12,500	.....	.....
G	.....	.....	.....	.....	711	6,300	.....	.....	2,282	20,200	.....	.....	1,694	15,000
H	.....	.....	.....	.....	768	6,800	.....	.....	2,598	23,000	.....	.....	2,090	18,500
J	.....	.....	.....	.....	.....	.....	.....	.....	2,824	25,000	.....	.....	2,203	19,500
L	.....	.....	.....	.....	.....	.....	.....	.....	3,050	27,000	.....	.....	.....	.....
M	.....	.....	.....	.....	.....	.....	.....	.....	3,220	28,500	.....	.....	.....	.....
N	.....	.....	.....	.....	.....	.....	.....	.....	3,389	30,000	.....	.....	.....	.....

Note: For rayon cord tires, applicable energy values are 60 percent of those in table.

* * * * *

Issued on: January 2, 2013.

Christopher J. Bonanti,

Associate Administrator for Rulemaking.

[FR Doc. 2013–00315 Filed 1–9–13; 8:45 am]

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R9–ES–2012–0034; 450 003 0115]

RIN 1018–AY68

Endangered and Threatened Wildlife and Plants; Listing the Blue-Throated Macaw

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), propose to list the blue-throated macaw (*Ara glaucogularis*) as endangered under the Endangered Species Act of 1973, as amended (Act). This species is endemic to a small area in Bolivia, and there are estimated to be fewer than 150 individuals remaining in the wild. Its population continues to decrease despite intense conservation efforts. The primary threat to the species is lack of reproductive success (loss of nestlings) due to nest failure, which primarily is caused by competition for nest sites and predation by larger avian species, in addition to diminished availability of suitable habitat. We seek information from the public on the proposed listing for this species.

DATES: We will consider comments and information received or postmarked on or before March 11, 2013. We must receive requests for a public hearing by February 25, 2013. See Public Hearing section under **SUPPLEMENTARY INFORMATION** for more information.

ADDRESSES: You may submit information by one of the following methods:

- *Electronically:* Go to the Federal eRulemaking Portal: *http://www.regulations.gov*. In the Search field, enter FWS–R9–ES–2012–0034, which is the docket number for this action. Then click on the Search button. You may submit a comment by clicking on ''Comment Now.'' If your comments will fit in the provided comment box, please use this feature of *http://www.regulations.gov,* as it is most compatible with our comment review procedures. If you attach your comments as a separate document, our preferred file format is Microsoft Word. If you attach multiple comments (such as form letters), our preferred format is a spreadsheet in Microsoft Excel.
- *By hard copy:* U.S. mail or hand-delivery: Public Comments Processing, Attn: FWS–R9–ES–2012–0034, Division of Policy and Directives Management; U.S. Fish and Wildlife Service; 4401 N. Fairfax Drive, MS 2042–PDM; Arlington, VA 22203.

We will not accept comments by email or fax. We will post all comments on *http://www.regulations.gov.* This generally means that we will post any personal information you provide us (see the Information Requested section, below, for more information).

FOR FURTHER INFORMATION CONTACT: Janine Van Norman, Chief, Branch of Foreign Species, Endangered Species Program, U.S. Fish and Wildlife Service, 4401 North Fairfax Drive, Room 420, Arlington, VA 22203; telephone 703–358–2171. If you use a telecommunications device for the deaf (TDD), call the Federal Information Relay Service (FIRS) at 800–877–8339.

SUPPLEMENTARY INFORMATION:

Information Requested

We intend that any final actions resulting from this proposed rule be based on the best scientific and commercial data available. Therefore, we request comments or information from the Government of Bolivia, the scientific community, or any other interested parties concerning this proposed rule. We particularly seek clarifying information concerning:

(1) Information on taxonomy, distribution, habitat selection and trends (especially breeding and foraging habitats), diet, and population abundance and trends (especially current recruitment data) of this species.

(2) Information on the effects of habitat loss and changing land uses on

the distribution and abundance of this species and its principal food sources over the short and long term.

(3) Information on whether changing climatic conditions (i.e., increasing intensity of storms or drought) are affecting the species, its habitat, or its food sources.

(4) Information on the effects of other potential threat factors, including live capture and collection, predation by other animals, and diseases of this species or its principal food sources over the short and long term.

(5) Information on management programs for its conservation, including mitigation measures related to conservation programs, and any other private or governmental conservation programs that benefit this species.

(6) Genetics and taxonomy.

(7) The factors that are the basis for making a listing determination for a species under section 4(a) of the Act (16 U.S.C. 1531 *et seq.*), which are:

(a) The present or threatened destruction, modification, or curtailment of its habitat or range;

(b) Overutilization for commercial, recreational, scientific, or educational purposes;

(c) Disease or predation;

(d) The inadequacy of existing regulatory mechanisms; or

(e) Other natural or manmade factors affecting its continued existence.

Please include sufficient information with your submission (such as full references) to allow us to verify any scientific or commercial information you include. Submissions merely stating support for or opposition to the action under consideration without providing supporting information, although noted, will not be considered in making a determination. Section 4(b)(1)(A) of the Act directs that determinations as to whether any species is an endangered or threatened species must be made ''solely on the basis of the best scientific and commercial data available.''

Public Hearing

At this time, we do not have a public hearing scheduled for this proposed rule. The main purpose of most public hearings is to obtain public testimony or comment. In most cases, it is sufficient to submit comments through the Federal eRulemaking Portal, described above in the **ADDRESSES** section. If you would like to request a public hearing for this proposed rule, you must submit your request, in writing, to the person listed in the **FOR FURTHER INFORMATION CONTACT** section by the date specified above in **DATES**.

Previous Federal Actions

On May 6, 1991, we received a petition (1991 petition) from Alison Stattersfield, of the International Council for Bird Preservation (ICBP), to list 53 foreign birds under the Act, including the blue-throated macaw, which is the subject of this proposed rule. We took several actions on this petition. On December 16, 1991, we made a positive 90-day finding and announced the initiation of a status review of the species included in the 1991 petition (56 FR 65207, published December 16, 1991). On March 28, 1994 (59 FR 14496), we published a 12-month finding on the 1991 petition. In that document, we announced our finding that listing 38 species from the 1991 petition, including the blue-throated macaw, was warranted but precluded because of other listing actions. The blue-throated macaw was assigned a listing priority number (LPN) of 2. Species are assigned LPNs based on the magnitude and immediacy of threats, as well as their taxonomic status. The lower the LPN, the higher priority that species is for us to determine appropriate action using our available resources. An LPN of 2 reflects threats that are both imminent and high in magnitude, as well as the taxonomic classification of the blue-throated macaw as a full species.

Previously published petition findings, listing rules, status reviews, and petition finding reviews that included foreign species are listed in the Annual Notice of Review (ANOR) that published on May 3, 2011 (76 FR 25150). In our ANORs, we announce our annual petition findings for foreign species, as required under section 4(b)(3)(C)(i) of the Act. When, in response to a petition, we find that listing a species is warranted but precluded by higher priority listing actions, we must review the status of the species each year until we publish a proposed rule or make a determination that listing is not warranted. These subsequent status reviews and the accompanying 12-month findings are referred to as ''resubmitted'' petition findings. In the May 3, 2011, ANOR, we announced that listing was warranted but precluded for 20 foreign species, including the blue-throated macaw, which is the subject of this proposed rule. Additional information on this species may be found in that ANOR.

Background

Section 4(b)(1)(A) of the Act directs that determinations as to whether any species is an endangered or threatened species must be made ''solely on the basis of the best scientific and commercial data available.''

In this document, we propose to add this species as endangered to the Federal List of Endangered and Threatened Wildlife. Prior to issuing a final determination on this proposed action, we will take into consideration all comments and any additional information we receive. Such information may lead to a final rule that differs from this proposal. All comments and recommendations, including names and addresses of commenters, will become part of the administrative record.

Species Information

Taxonomy

The taxonomic status of this species was disputed until fairly recently. The blue-throated macaw was previously considered an aberrant form of the blue-and-yellow macaw (*A. ararauna*), but these two species are known to occur sympatrically (in the same location) without interbreeding (Kyle 2007a; del Hoyo *et al.* 1997). Common names in Spanish for the blue-throated macaw include guacamayo barba azul and guacamayo caninde. Both BirdLife International (BLI) and the Integrated Taxonomic Information System (ITIS) recognize the blue-throated macaw as *Ara glaucogularis.* ITIS (*www.itis.gov*) is a database maintained by a partnership of U.S., Canadian, and Mexican federal government agencies, other organizations, and taxonomic specialists to provide taxonomic information. Therefore, we accept the species as *Ara glaucogularis.*

Population

When the blue-throated macaw population was investigated as of 1998, the species was located in eight locations and the population was believed to be 100–150 individuals (Loro Parque Fundación (LPF) 2002, p. 13). The estimate provided by BirdLife International indicates that the total wild population is estimated to be 73–87 mature individuals (BLI 2012), which is a decrease from an estimate of between 50 and 300 birds when our previous ANOR was published. In October 2004, a small new population was found at Santa Rosa, 100 km (62 mi) west of locations believed to be the western-most edge of its range (LPF 2012; Herrera *et al.* 2007, p. 18). Biologists surveying for this species in 2004 found more birds than in previous surveys by searching specific habitat types (palm groves and forested islands) (Herrera *et al.* 2007, p. 18). In 2007, a population of approximately 25

individuals was found one hour south of Trinidad (Kyle 2007a, p. 6). Also in 2007, a flock of approximately 70 birds was observed near the Rio Mamoré (Asociación Armonía), in the vicinity of where the Barba Azul Nature Reserve is now.

In and around the Barba Azul Nature Reserve, there are believed to be approximately 100 individuals (Herrera 2012, pers. comm.; Kingsbury *et al.* 2010, p. 70). Currently, experts working locally with this species estimate that there are between 115 and 250 birds known to remain in the wild (Herrera 2012, pers. comm.; Gilardi 2012 pers. comm.). LPF's 2010 annual report (p. 15), stated that approximately 300 individuals were believed to remain in the wild. However, this may be an overestimate—the population found at the Barba Azul Nature Reserve may be the same birds that are monitored in the southern and eastern parts of its range during the breeding season; it is likely the population is nearer to 115 individuals (Gilardi 2012 pers. comm.).

In captivity, more than over 1,000 individual blue-throated macaws are likely held worldwide according to the 2011 North American Regional Studbook (Anderson 2011, p. 4).

Species Description

Blue-throated macaws have a blue throat, a bare, white face containing identifiable blue-streaks, dark grey irises, and a large black bill (Anderson 2011, p. 4; Kyle 2007b, p. 16). Its forehead is also blue and there is a lack of contrast between its remiges (large flight feathers on the wing) and upperwing coverts. This species is approximately the same size (85 cm or 33 inches) as the blue-and-yellow macaw. However, blue-throated macaws are not as competitive as the blue-and-yellow macaw in obtaining nesting cavities (Kyle 2007a). Male blue-throated macaws are larger than females at about 800 grams (1.76 pounds), and females weigh approximately 600 grams (1.32 pounds) (Kyle 2007b, p. 16).

Blue-throated macaws, like other parrot species, are monogamous and tend to mate for life. There is also a significant investment in the care for their young—blue-throated macaws are not fully independent of their parents for a full year (Berkunsky 2010, p. 5). Therefore, some breeding pairs may not produce nestlings every breeding season. The blue-throated macaw forms its nests in large tree cavities; its preferred nesting tree is the motacú palm (*Attalea phalerata*), which is native to Bolivia, Brazil, and Peru. The northern population of blue-throated macaws breeds between August to November, and the southern population breeds between November to March (Berkunsky 2012 pers. comm.; Kyle 2007a). The southern population, an hour south of Trinidad, tends to breed around the same time as the more commonly found blue-and-gold macaw. This overlap of breeding seasons adds to competition for nest sites. Blue-throated macaws are sexually mature between 6 and 8 years (Strem 2008; Kyle 2007a, p. 6). Females lay one to three eggs per clutch and incubate for 26 days. One to three hatchlings are raised, depending on food availability (BLI 2010; Kyle 2007a). Nestlings fledge between 13 and 14 weeks. Blue-throated macaws are seen traveling mostly in pairs but also have been seen in a large flock of between 70 and 100 individuals (Herrera 2012, pers. comm.; Macleod *et al.* 2009, p. 15; Waugh 2007a, p. 53).

Diet

This species seeks areas where palm fruits and suitable nesting cavities are readily available (Herrera *et al.* 2007, pp. 18–24). It feeds on fruits of approximately 12 species of trees (Kyle 2007a, pp. 1–10). There are 84 species of palms in Bolivia (Moraes *et al.* 2001, p. 234) and approximately 11 palm species within the blue-throated macaw's range. Blue-throated macaws prefer the fleshy part of the fruit, or mesocarp, of motacú, *Mauritia flexuosa* (royal palms or carandai-guazú), and *Acrocomia aculeata* (common names include: Coyoli palm, gru-gru palm, macaw palm, acrocome, Coyolipalme, amankayo, corojo, corozo, baboso, tucuma, and totai) (Herrera 2007, p. 20; Yamashita and M. de Barros 1997, p. 144; Jordan and Munn 1993; *www.ars-grin.gov, www.pacsoa.org.au*). The macaws first puncture the apex of the mesocarp and remove the outer layer (Yamashita and M. de Barros 1997, p. 144). The motacú continually produces fruit throughout the year. Between 80 and 90 percent of motacú palms produce fruits all year, but its peak is between July and December (LPF 2003, p. 21; Moraes *et al.* 1996, p. 424). Motacú is believed to be pollinated by beetles in the *Mystrops* genus (Moraes *et al.* 1996, p. 425). The same palm tree may produce at any one time between three and five racemes (flowering stalks, each with fruits in a different stage of development ripeness) (Yamashita and M. de Barros 1997, p. 144).

The species has also been observed at clay licks (Kyle 2007a, p. 2), which are clay banks where they consume soil or minerals; however, the reason for the clay consumption remains unclear.

Range and Habitat Description

The blue-throated macaw is endemic to the tropical savanna ecoregion of north-central Bolivia in the Department of Beni (LPF 2010; Kingsbury 2010, p. 8). This ecoregion is approximately 160,000 square kilometers (km^2) (61,776 square miles (mi^2)). (See Appendix A in Docket no. FWS–R9–ES–2012–0034 at *http://www.regulations.gov* for a map of the region (hereinafter referred to as ''Appendix A'')). Within this region, the blue-throated macaw is found mostly in widely dispersed isolated pairs within an area estimated to be between 8,000 and 12,900 km^2 (3,089 and 4,981 mi^2), (LPF 2012; BLI 2012; Hesse 2000, p. 104). The species is found at elevations between 200 and 300 m (656 and 984 ft) (Yamashita and M. de Barros 1997, p. 144; Brace *et al.* 1995). The blue-throated macaw's habitat was occupied by humans for thousands of years before European colonization (Erickson 2000, p. 2). Its habitat consists of lowlands in an area known as Llanos (plains) de Mojos, also known as Llanos de Moxos (LPF 2010; Mayle *et al.* 2007, p. 301; Yamashita and M. de Barros 1997, p. 141). See Appendix A for a photo representing the flooded habitat. The Llanos de Mojos is a wide savannah plain with poor drainage and in the wet season is extremely susceptible to flooding. The floods cover large areas of the plains and the area may remain flooded for 5 to 7 months in some areas. These plains include parts of the river basins of the Iténez, Mamoré, Beni, and Madre de Dios Rivers (see Appendix A for a map; Yamashita and M. de Barros 1997, p. 144).

The blue-throated macaw's habitat has progressively diminished over thousands of years and its habitat is now primarily restricted to small ''islands'' of suitable habitat within privately-owned cattle pastures (see Appendix A in Docket no. FWS–R9–ES–2012–0034 at *http://www.regulations.gov* for a photo illustrating these islands; Milpacher 2012 personal communication; Kingsbury 2010, p. 72; Berkunsky 2008, p. 4; Kyle 2007a, p. 4; Kyle 2006, p. 7; LPF 2003, p. 6). The species has been observed in the Barba Azul Nature Reserve. The blue-throated macaw is believed to occur on ranches adjacent to the Barba Azul Nature Reserve, Ranches Las Gamas, Los Patos, Pelotal, and Juan Latino, but the status of the species is unclear in these areas (Kingsbury 2010, p. 89). In other parts of the species' range, the species is believed to occur on the ranches *Elsner with Espíritu,* San Rafael, and the Estancia El Dorado, however, to the best of our knowledge,

these are privately managed and the species is not being monitored on the ranches.

Palm Islands

Palm-dominated forest islands form the blue-throated macaw's primary habitat. These ''islands'' are on elevated terrain and are sometimes referred to as ''alturas'' (high ground). The islands were primarily formed as mounds resulting from prehistoric human existence in this region (Erickson 2008, pp. 168–169). The lowlands are frequently inundated by water due to the flooding of nearby rivers (see Appendix A). Historically, human cultures manipulated the water flow to create plains that were higher and subsequently drier (Erickson 2008, pp. 168–169). The mounds are common throughout the savannas and wetlands of Bolivia; there may be as many as 10,000 of these mounds or islands in Bolivia (Erickson 2008, p. 169). They have been found to vary in size from a few hectares to many square kilometers (Erickson 2008, pp. 168–169; Yamashita and M. de Barros 1997, p. 144). Most are raised less than one meter and are often surrounded by ponds or moat-like ditches (Erickson 2008, pp. 168–169). Typically, these islands are surrounded by seasonally-flooded grasslands. These islands are between 0.2–1.0 ha (0.49–2.47 ac) in size and are approximately 130–235 meters (426–771 feet) above sea level (Kingsbury *et al.* 2010, p. 71; Yamashita and M. de Barros 1997, p. 144).

Besides motacú, palm species found on these islands are typically *Syagrus botriophora* (sumuqué), and *Astrocaryum vulgare* (chontilla), interspersed with semi-deciduous emergent trees such as *Enterolobium cortisiliqun* (parota or orejón), *Sterculia striata* (no common name (NCN)) and *Tabebuia heptaphilla* (Lapacho negro), and the Curupau tree (*Anadenanthera colubrina)* (also known as yopo, vilca, huilco, wilco, cebil, or angico) (Kyle 2005, p. 7). Some trees such as *Ceiba pentandra* (mapajo or kapok tree) and *Hura crepitans* (common names include catahua, Ochoo, arbol del diablo, acacu, monkey's dinner-bell, habillo, ceiba de leche, sandbox tree, possum wood, dynamite tree, ceiba blanca, assacu, and posentri) can reach more than 40 m (131 ft) in height.

The motacú palms may have survived on the mound islands for various reasons—their value to human cultures, their resistance to burning, and their ecological suitability to the microclimate. Motacú is not only vital to the life history of blue-throated macaws; it also has local, commercial, and ecosystem importance (Kyle 2005, p. 3; Moraes *et al.* 1996, pp. 424–425). This species of palm is used in the local community as thatch for housing which can last up to seven years. Its fruit is consumed by humans and various other species, and parts of the palm tree are used to make baskets, brooms, and is sold commercially as palm oil (Zambrana *et al.* 2007, p. 2785; Moraes *et al.* 1996, pp. 425–426).

Significance of Palm Islands to Blue-Throated Macaws

Habitat favored by blue-throated macaws contains tall, mature trees in areas with continuous motacú palm fruit production (Yamashita and M. de Barros 1997, p. 145). Densities of motacú, the blue-throated macaw's preferred nesting and feeding source, vary greatly. In the 1997 Yamashita and M. de Barros study, macaws were only observed in areas where motacú represented more than 60 percent of the trees.

Natural cavities in dead or decaying trees (usually motacú palms) are the primary source of nesting sites for this species. Blue-throated macaws prefer dead trees that have cavities with a minimum internal diameter of 30 cm (11.8 in) for nesting, and, therefore, the tree must have a diameter at breast height of 60 cm (23.6 in) or greater (see Appendix A for a picture representing a tree cavity; Yamashita and M. de Barros 1997, p. 145).

Factors Affecting the Species

Section 4 of the Act, and its implementing regulations at 50 CFR part 424, set forth the procedures for adding species to the Federal Lists of Endangered and Threatened Wildlife and Plants. Under section 4(a)(1) of the Act, we may list a species based on any of the following five factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; and (E) other natural or manmade factors affecting its continued existence. Listing actions may be warranted based on any of the above factors, singly or in combination. Each of these factors is evaluated and a summary is presented in this document.

Loss of Palm Islands Due to Habitat Conversion

Within the past few hundred years, the blue-throated macaw lost much of its remaining habitat due to conversion of palm forests to pasture for cattle grazing. Cattle are not native to Bolivia; they were introduced to Bolivia in the 1600s. After the Second World War, cattle ranching and the associated burning of pastures began to have a significant impact on the landscape (Robison *et al.* 2000, p. 61). The macaw's preferred habitat is now limited to a few small, isolated islands of suitable habitat which are surrounded by these cattle ranches (Gilardi 2012 pers. comm.). During the flooding season which can occur up to six months of a year, cattle take refuge on the motacú palm islands because the islands are drier due to their higher elevation (LPF 2003, p. 33). Adding to habitat loss, in the preferred habitat of the blue-throated macaw where these motacú palms remain (within privately-owned cattle ranches), local ranchers typically burn the pastures annually (Berkunsky 2008, p. 4; del Hoyo 1997). This type of burning results in almost no recruitment of native palm trees, which are vital to the ecological needs of the blue-throated macaw (Yamashita and M. de Barros 1997, p. 144). The reduction in habitat (reduced availability of motacú palms) and lack of recruitment of motacú palms is a concern for the future because it takes several years for motacú palms to be able to produce fruit and to develop into a size suitable for nesting cavities. As mitigation, there are local conservation efforts to attempt to not only plant trees that provide food for blue-throated macaws, as well as education efforts directed towards land-owners within the range of the blue-throated macaws.

The lack of nesting cavities (suitable habitat) is often a limiting factor for bird species that depend on these cavities for nesting (Sandoval and Barrantes 2009, p. 75; Kyle 2006, p. 8). Blue-throated macaws requires specific nesting cavities for raising their young which provide an environment where they are safe from predation and flooding. Additionally, many different species compete for nest sites because there is a lack of suitable nest sites in the Llanos de Mojos due to habitat loss. This loss of suitable trees has resulted in increased competition from other species for these nesting cavities as well. The loss of habitat has contributed to other factors that affect blue-throated macaws such as an increase in vulnerability to predation, extreme weather events, and competition for nests, which are discussed below.

Nest Failure

Nest failure (the failure of nestlings to survive to fledgling stage) continues for various reasons, despite intensive conservation efforts (Berkunsky 2010, p.

4; Kyle 2006, p. 8). Some of the primary causes of nest failure have been predation, infestation by botflies (parasites in the *Philornis* genus), exposure to severe weather events such as flooding, and competition with other species such as bees (Berkunsky 2010, pp. 4–5). Many nestlings die in early developmental stages, often due to starvation (due to lack of food and parental neglect), exposure to cold temperatures, or flooding (Kyle 2007a, pp. 1–10). If parents do not have access to enough nutritional food sources, some nestlings are neglected so that their other nestlings will survive. Sometimes nestlings can also fall out of collapsed trees before they have fledged. During five field seasons of closely observing nest sites, often 50 percent of nestlings died (Berkunsky 2008, p. 5; Kyle 2007a, pp. 7–8). See additional discussion below under *Exposure to extreme weather events* section.

Predation

Predation stands out as one of the main reasons why this species' population is not increasing (Kyle 2007a, pp. 3, 6–7; Kyle 2006, p. 8). As an example, during one season, of the seven active blue-throated macaw nests found, all of the nestlings within three nests were lost to predation (Kyle 2007a, pp. 6–8). Because the species has such a small population size with likely fewer than 150 remaining in the wild), losses such as this have a significant effect. Predators of the blue-throated macaw include:

Toco toucan (*Ramphastos toco*),

Crane hawk (*Geranospiza caerulescens*),

Great-horned owl (*Bubo virginianus*), and

Southern crested caracara (*Caracara plancus,* a bird of prey).

The blue-throated macaws' habitat of sparse, palm-forested islands scattered among natural grasslands, is especially vulnerable to nest predation (Kyle 2007a, pp. 6–7). Tree nest cavities chosen by blue-throated macaws tend to be very visible to other avian species flying overhead. In addition to choosing nests in palm islands, blue-throated macaws are also known to nest in isolated palms in open fields, which are even more exposed than nesting in palm islands (Herrera *et al.* 2007, p. 20). All of the species that predate on adult blue-throated macaws, eggs, or nestlings have large distributions and are commonly found at the habitat islands used by blue-throated macaws (Kyle 2007a, pp. 6–7). Great horned owls have been seen at almost every site where blue-throated macaws are nesting and monitored (Kyle 2007a, p. 6). These owls, native to South America, have a vast range, are the most widely distributed owl in South America, and occupy a variety of habitats including open forest, farmland, and grassland.

Because blue-throated macaw nests are concentrated in these small ''islands'' of trees within cattle pastures, they are more easily located by predators than species that nest in a continuous forest setting. To discourage and mitigate the effects of predation, some conservation activities being conducted include the monitoring and discouragement of predators from attacking blue-throated macaw nests. These efforts are extremely intensive for each nest. In one case, where it appeared the nest tree was collapsing, the tree was monitored all night by conservation staff (Kyle 2007a, p. 9). Often trees containing active nests are monitored in this way if persistent predation has been observed. The mitigation efforts are helpful—if nestlings can survive until they are at least 300 grams (0.66 pounds), they have a greater chance of survival (Kyle 2007a, p. 7).

Botfly parasites can also cause mortality of nestlings and have been observed in blue-throated macaw nestlings. Botflies live subcutaneously, and feed on macaws before pupating (Wunderle Jr. and Arendt 2011, p. 39). Botflies significantly reduce the energy available for nestling growth and development (Uhazy and Arendt 1986 in Wunderle Jr. and Arendt 2011, p. 39) and can cause high death rates of nestlings. In one study of avian nestlings, botfly parasitism caused 56 percent of mortalities while egg and chick losses from nest predators and competitors accounted for less than 10 percent of reproductive failures (Arendt 2000 in Wunderle Jr. and Arendt 2011, p. 39).

Exposure to Extreme Weather Events

Due to their preferred nesting location, blue-throated macaws are also vulnerable to natural catastrophic events such as flooding, drought, and other stochastic disturbances (Kyle 2006, pp. 5–6). Bolivia is described as a ''climatically volatile region'' and is one of the countries in the world most affected by natural disasters in recent years (Oxfam International 2009, p. 5). This species' habitat experiences radical changes over the course of a year.

For many months of the year its habitat is flooded, and other times during the year, its habitat suffers from severe drought. High rainfall occurs during the summer months; the wet season is between September and May. Annual precipitation is between 1,100–2,500 millimeters (43–98 inches) (Haase & Beck 1989 in Kingsbury 2010, p. 9). Very heavy periods of rainfall in this region can continue for long periods of time (Kyle 2006, pp. 5–6; Hanagarth and Sarmiento 1990 in Beck and Moraes, undated). Every 6–12 years, 80–90 percent of the region is inundated (Beck and Moraes, undated). This cyclical flooding may be an El Niño event, but there has been no study correlating the phenomena (Mayle et al. 2007, p. 294, Beck and Moraes, undated). Although these areas are seasonally-flooded, they are also prone to periods of drought (Kyle 2007a, p. 3, Mayle et al. 2007, p. 294; Yamashita and M. de Barros 1997, p. 144).

Severe storms, such as one that occurred in 2005 are described as ''nest killers.'' These severe storms cause the dead palm trees in which the nests have been constructed to collapse or flood (Kyle 2007b, p. 15) which causes nest failure for the season and subsequently no recruitment. During periods of drought, nestlings are sometimes neglected and starve. Heavy storms and rain contribute to nest failure; if nestlings are exposed to cold weather and rain, they may die.

Dead palm trees often collapse in these storms. During the 2006–2007 season, this phenomenon was observed when the nest of one blue-throated macaw pair in a motacú dead palm tree collapsed due to strong winds (Kyle 2007a, p. 4). Although the reason is unclear, these dead palm trees are currently the preferred sites for nest construction by the blue-throated macaw and they have strong nest site fidelity (Berkunsky 2012 pers. comm.). The extent this behavior is learned and modified is also unclear. However, researchers are working with this species to introduce nest sites that are safer and less prone to predation and nest failure due to extreme weather events such as flooding (Berkunsky 2010, pp. 4–5). Flooding, a significant cause of nest failure in the recent past, is reported not to have occurred in nests that have been intensely monitored and human-manipulated since 2008. This is due to one of the conservation measures in place: drilling drain holes in the nests and at the bottom of the dead palm trees in order to prevent nest flooding. However, flooding can still occur if nests are not monitored and manipulated.

Competition for Nest Sites

In addition to nest failure, there is a shortage of nests. As described above, there is little remaining of the preferred habitat of motacu palms. The species appears to ''learn'' nesting sites, and

will re-use nesting locations that they had used in the past (Berkunsky 2010; Kyle 2007a, p. 4). Although it is unclear why blue-throated macaws choose to nest in the top of dead motacú palms and are subsequently exposed to predation, competition from other species for nests, drought, excessive rainfall and nest flooding, it is their preferred nesting tree because it provides easy access to their preferred food source. Many species, in addition to the blue-throated macaw, use the motacú palm for feeding and nesting. In the Llanos de Mojos, there are 21 species of parrots which may compete for nest sites (Kingsbury *et. al.* 2010, p. 83; Yamashita and M. de Barros 1997, p. 144). Some species known to compete for nest sites with the blue-throated macaw include the blue and gold macaw, woodpeckers, and bees (Kyle 2007a, p. 6; LPF 2003, p. 33).

In order to provide more choices for nesting habitat, conservation organizations are installing nest boxes. n 2009, in the Barba Azul Nature Reserve, 46 artificial nests were monitored, in part by video cameras; however, the majority of them (24 nests) were occupied by blue and gold macaws (LPF 2010, p. 15). Likely due to the larger size of the blue and gold macaw or perhaps their more aggressive nature, the blue and gold macaws usually win most confrontations for nests (Kyle 2007a, p. 6). During the 2010 field study at the Barba Azul Nature Reserve, researchers also observed that there were a greater number of blue and gold macaws using the Barba Azul Nature Reserve than blue-throated macaws (Kingsbury 2010, p. 83). At an area where both species were drinking water, researchers noted that the blue-throated macaws exhibited agitated behavior when blue and yellow macaws were nearby (Kingsbury 2010, p. 83). Although the Barba Azul Nature Reserve was established specifically for the blue-throated macaws, other species use the reserve and compete for nesting sites.

To mitigate this problem, at least two conservation organizations are installing nest boxes to create more available sites for nesting, but despite the past 10 years of conservation efforts and experimentation with nest boxes, nest failure still occurs. In addition to predation, other reasons for nest failure are numerous, which has instigated the experimentation and installation of these nest boxes. Bees and other species continue to compete with blue-throated macaws for these nest boxes. After many years of experimentation, the nest boxes are slowly becoming more effective at providing suitable nesting sites. The blue-throated macaws seem to habituate to certain nesting sites and locations likely based on food availability and learned behavior.

Although blue-throated macaws have begun to use some of the nest boxes, it has been a slow and tedious process to encourage blue-throated macaws to use these boxes, and the population continues to suffer losses, particularly due to nest failure, which the installation of suitable nest boxes is attempting to alleviate. When nests fail (no nestlings survive that season), a significant amount of effort has been expended by that breeding pair. Because this species has such a small population (likely there are less than 150 individuals remaining), each time a nestling survives to become an adult, it is extremely significant to the population. Macaws tend to mate for life, so each individual blue-throated macaw is extremely valuable to the population, particularly. The species also cares for its young over two seasons, so each pair of macaws invests a significant amount of energy into its young. The effect of the death of each new nestling on the population of blue-throated macaws is devastating to the viability of the population. If the nestlings survive the first season to the point they fledge, their chances of survival are much greater than when they are new nestlings when they are entirely dependent on their parents for survival.

Bees can also make both natural nesting cavities and man-made nest boxes inhospitable for blue-throated macaws (Berkunsky 2008, p. 5). At the beginning of one breeding season, 67 percent of nest boxes monitored were occupied by bees (Berkunsky 2008, p. 5). After being removed, bees had returned within 2 weeks. Most naturally occurring nest sites, because there are so few of them and they are in demand by numerous species, require intense monitoring and manipulation in order to maintain an attractive, suitable environment for the blue-throated macaws for nesting.

Disease

Macaws are susceptible to many bacterial, parasitic, and viral diseases, particularly in captive environments (Kistler *et al.* 2009, p. 2,176; Portaels *et al.* 1996, p. 319; Bennett *et al.* 1991). Macaws are prone to many viral infections such as retrovirus, pox virus, and paramyxo virus which can cause weakened immune systems and subsequent death (Gaskin 1989, pp. 249, 251, 252). Recently, histopathological examination revealed the likely presence of the pox virus in dead blue-throated macaw nestlings, indicating that close contact between blue-throated macaws and domestic poultry may be facilitating pathogen transmission to this highly vulnerable species (Wildlife Conservation Society (WCS) *in litt.* 2011). In one location within the very limited range of the blue-throated macaw, blue-throated macaws share water sources with chickens, ducks, and other avian species (WCS *in litt.* 2011; Kingsbury 2010, p. 83). Blue-throated macaws in this area are being closely monitored to decrease the possibility of transmission of the pox virus; however, it is still a concern.

Proventricular dilatation disease (PDD) is one of the worst diseases known to affect parrots (Kistler *et al.* 2008, p. 2). PDD, also known as avian bornavirus (ABV) or macaw wasting disease, is a fatal disease that poses a serious threat to all domesticated and wild parrots worldwide, particularly those with very small populations (Kistler *et al.* 2008, p. 1; Abramson *et al.* 1995, p. 288). This contagious disease causes damage to the nerves of the upper digestive tract, so that food digestion and absorption are negatively affected. The disease has a 100-percent mortality rate in affected birds, although the exact manner of transmission between birds is unclear (Kistler *et al.* 2008, p. 1). PDD has been documented in several continents in more than 50 different parrot species and in free-ranging species in at least five other orders of birds (Kistler *et al.* 2008, p. 2). This disease is somewhat concerning because blue-throated macaws share water sources with other species of birds, and this disease could be transmitted between individuals that are within close range.

This species is closely monitored in the wild; conservationists working with this species are taking precautions so that diseases are not introduced into the wild population. Despite close monitoring and precautions, disease is likely to affect this extremely small population; therefore, we are concerned that diseases will become problematic to this species in the wild.

Small Population Size

An additional factor that affects the continued existence of this species is its small, declining population of likely less than 150 individuals. Recently, two disturbing observations have been made: Malformations in chicks and reduced fertility in many reproductive pairs (WCS *in litt.* 2011). Small, rapidly declining populations of species, combined with other threats such as reduced reproductive success, leads to an increased risk of extinction (Harris and Pimm 2008, p. 169). This species

faces many challenges—it has many predators, limited suitable habitat, and competition from other species for nest sites, in addition to its small population size. Any loss of potentially reproducing individuals could have a devastating effect on the ability of the population to increase. Small populations have a higher risk of extinction due to random environmental events (Shaffer 1981, p. 131; Gilpin and Soule 1986, pp. 24–28; Shaffer 1987, pp. 69–75). Because of its small population and restricted range, the blue throated macaw is vulnerable to random environmental events; in particular, it is threatened by extreme precipitation events and nest flooding.

Removal From the Wild

Removal of parrots from the wild over the past few hundred years contributed to this species' small population size ((LPF 2012; Herrera and Hennessey 2009, p. 233; Kyle 2007a). Macaws, both live and dead, have been a significant part of Bolivian culture for thousands of years. Evidence of this exists in pre-Colombian Andean feather art (American Museum of Natural History 2012). Feathers have been used historically in headdresses; and parrots have been used in ceremonial sacrifices (American Museum of Natural History 2012; Berdan 2004, p. 4; Creel and McKusick 1994, pp. 510–511). Feathers of blue-throated macaws would still be used for headdresses today if it were not for intervention and education programs implemented by nongovernmental conservation organizations (NGOs) (BLI 2012; LPF 2010; LPF 2003, p. 29). In addition to being used in ceremonies and costumes, there is evidence that parrots have been household pets since at least A.D. 1000 (Creel and McKusick 1994, pp. 513–515) as evidenced in burial remains; and live macaws very likely had commercial value even during that time period. Parrots were traded over long distances; archeological remains indicate that parrots were found well outside their native range (Creel and McKusick 1994, pp. 515–516).

The most significant impact to the decline of this species' population was likely due to collection for museums during the late 1800s and early 1900s (Yamashita and M. de Barros 1997, p. 144). During this time period, bird-skin traders of European descent sold thousands of bird skins, especially to museums in the United States for at least three generations (Smithsonian National Museum of Natural History 2012; Yamashita and M. de Barros 1997, p. 144; Trimble 1936, pp. 41–43).

The Inadequacy of Existing Regulatory Mechanisms

Under the Act, we are required to evaluate the whether the existing regulatory mechanisms are adequate. There are limited legal mechanisms in place to protect this species (de la Torre *et. al.* 2011, p. 334; Herrera and Hennessey 2007, p. 295; LPF 2003, p. 6–7). This species is considered critically endangered by the International Union for Conservation of Nature (IUCN) (BLI 2012; LPF 2012). However, IUCN rankings do not confer any actual protection or management. This species is listed in Appendix I of CITES (CITES 2012), which, along with the ban by the Bolivian Government in 1984 to export this species, effectively limits international trade (LPF 2012; Herrera and Hennessey 2009, p. 233–234; LPF Recovery Plan 2003, p. 7). CITES Appendix I includes species that are ''threatened with extinction which are or may be affected by trade.'' Species listed under Appendix I may not be traded for primarily commercial purposes. These protections were put in place because the species had suffered substantial population declines throughout its range due to habitat destruction and overexploitation. Within Bolivia, the government of Bolivia has enacted various laws and regulatory mechanisms to protect and manage wildlife and their habitats. For example, the Bolivian Government prohibits and takes sanctions against the possession and the traffic of any protected species such as the blue-throated macaw (LPF Recovery Plan 2003, p. 7). Further, a study published in 2011 noted that many institutional changes have occurred in recent years in Bolivia (de la Torre *et al.* 2011, p. 332). However, even after the export of this species was prohibited in the 1980s and despite the laws in place and the intense conservation efforts ongoing for this species, the species' population has not recovered and some localized illegal trade is still occurring.

International trade in this species is now negligible (*http://www.unep-wcmc.org,* accessed June 4, 2012). International trade of the blue-throated macaw was initially restricted by the listing of the species in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 1981, and in 1983, the species was transferred from Appendix II to Appendix I. CITES regulates international trade in animal and plant species listed under the Convention. For additional information on CITES, visit *http://www.cites.org/*. Between 1981 and 1985, 134 Blue-throated Macaws were reported to have been exported to the United States (TRAFFIC 1987 in Herrera and Hennessey 2007, p. 296). However, no specimens of blue-throated macaws have been exported from Bolivia since 1984 when Bolivia banned the export of this species (*http://www.unep-wcmc.org,* accessed June 4, 2012).

Although international trade is not a concern, poaching for local sale continues to occur (LPF 2012; Herrera and Hennessey 2009, p. 233; Kyle 2007a). Although Bolivia banned the export of live parrots in 1984 (Brace et al. 1995, pp. 27–28), localized illegal trade within South America continued to occur, although it became less frequent (Herrera and Hennessey 2009, p. 233). For example, in 1993, investigators reported that an Argentinean bird dealer was offering Bolivian dealers a ''high price'' for blue-throated macaws (Jordan and Munn 1993, p. 695).

More recently, a study of markets in Santa Cruz, Bolivia estimated that over 22,000 individuals of 31 parrot species were illegally traded during 2004–2005 despite Bolivian laws (Herrera and Hennessey 2007, p. 298). Bolivian Law 1333 (Ministerio de Desarrollo Sostenible y Planificacion 1999), Article 111 states that all persons involved in trade, capture, and transportation without authorization of wild animals will suffer a two-year prison sentence together with a fine equivalent to 100 percent of the value of the animal. This law is supported by an addendum that states that all threatened species are of national importance and must be protected (Herrera and Hennessey 2007, p. 295). Asociación Armonía (a nonprofit organization in Bolivia) monitored the trade of wild birds that passed through a pet market in Santa Cruz, Bolivia, from periods between July 2004 to December 2007 (Herrera and Hennessey 2009, p. 233; Herrera and Hennessey 2007, p. 295). During the 2004–2005 study period, none of the parrots found were blue-throated macaws. In 2006, two blue-throated macaws were found for sale (Herrera and Hennessey 2009, p. 233). However, the blue-throated macaw was absent in the market during the monitoring period prior to 2006 and no blue-throated macaws were found for sale in this market in 2007 (Herrera and Hennessey 2009, p. 233; Herrera and Hennessey 2007, p. 295). This absence of the species in the market may be due either to the effectiveness of the ongoing conservation programs and laws in Bolivia, or it may be indicative of the scarcity of blue-throated macaws in the wild. Ninety-four percent of the birds

documented were believed to be wild-caught. This illegal activity occurs despite the national laws that ban unauthorized trade (Herrera and Hennessey 2007, p. 298).

The high value of this species could lead to continued illegal trade. An Internet search indicated that captive-bred specimens of this species sell for between $1,500 and $3,000 in the United States (*www.hoobly.com,* accessed September 13, 2010). One search advertised that this is a ''very rare species and there are only 300 left in the wild.'' However, alternatively, because these birds are not difficult to breed in captivity, the supply of captive-bred birds has increased which some experts believe may be alleviating illegal collection of wild birds (Waugh 2007a).

Removal of blue-throated macaws from the wild can have a particularly devastating effect given their low reproductive rate, and slow recovery from various environmental pressures (Lee 2010, p. 3; Wright *et al.* 2001, p. 711). In situations where the population is very small and the species is adding new individuals to the population at such a slow rate (due to high nestling mortality), any unauthorized removal from the wild will have a significant effect on the species' population. Some blue-throated macaws have even been used for fish bait (Kyle 2007a, p. 7). The remains of a blue-throated macaw were found near a lake stuffed into a tree cavity with a bag of salt (Kyle 2007a, p. 7). Because this species has so few individuals remaining, any removal from the wild is extremely detrimental to the survival of the species when taken into consideration with all of the other factors acting upon the species.

In-Situ Conservation

This species is considered by many organizations to be the most endangered macaw remaining in the wild (BLI 2012; World Parrot Trust (WPT) 2012; LPF 2010, LPF 2003, p. 4). Several NGCOs are working intensely on various conservation projects to protect this species and its habitat. Various NGCOs have been involved in the conservation of this species since 1995 with authorization from the Bolivian Government (Gilardi 2012, pers. comm.; LPF 2002, p. 10). NGCOs involved include Asociación Armonía (Bolivia's BirdLife International partner); the Loro Parque Fundación (LPF), and WPT. A Species Recovery Plan that provides the basis for the Blue-throated Macaw Conservation Program was approved by Bolivia's Ministry for Sustainable Development in 2004 and has been in place since then (LPF 2003, pp. 6–7).

Within its breeding range, a multitude of efforts are in progress to conserve the species (Gilardi 2012 personal communication; Berkunsky 2010, p. 5, Kyle 2007, pp. 1–11). Conservation measures include constant monitoring, protection, and manipulation of nests, supplementing nestlings' diet when food sources are scarce, agreements with private landowners, patrolling existing macaw habitat by foot and motorbike, and monitoring the Beni lowlands for additional populations (LPF 2012; Kyle 2007a; Snyder et al. 2000). Nongovernmental conservation organizations (NGCOs) have implemented cooperation agreements with the federation of cattle farmers of the Beni (FEGABENI) and the local authorities in Trinidad (LPF et al. 2003, p. 6).

Land acquisition to expand protected habitat for this species has been funded by the World Land Trust. In 2008, Asociación Armonía and LPF purchased a 3,555-ha (8,785-ac) reserve for the purpose of establishing a protected area for the blue-throated macaw (WorldLand Trust 2010, accessed July 16, 2010; BLI 2008). In 2010, the Barba Azul Nature Reserve was expanded by 1,123 hectares (ha) (2,775 acres (ac)), creating a total protected area for the blue-throated macaws of 4,664 ha (11,525 ac) (Asociación Armonía 2012). Currently, this Reserve is the only protected area designated for the blue-throated macaw. Legal protections that apply fall under Bolivian Law 1333 (Ministerio de Desarrollo Sostenible y Planificacion 1999), Article 111. This Reserve protects savanna habitat; and habitat restoration is occurring in the Reserve, although it is unclear the extent the Reserve is used by blue-throated macaws. The actual protections in place include monitoring of habitat, local education and awareness programs about the species, establishment of suitable nesting sites. Approximately 70 blue-throated macaws have been observed in or around this Reserve (Herrera 2012, pers. comm.); however, these macaws may be some of the same macaws that are observed in other parts of its range during the breeding season (Berkunsky 2012, pers. comm.).

Despite the existence of the reserve, there are no nests in the Reserve that are occupied by the blue-throated macaws (Herrera 2012, personal communication). Although blue-throated macaws do not use this area for breeding, there is evidence that they use the Reserve for feeding (Herrera 2012, personal communication; Kingsbury 2010, pp. 69–82). It appears that blue-throated macaws use the Reserve and adjacent ranches during the non-breeding season while their breeding-season habitat is seasonally-flooded (see Appendix A for a map of its range; Milpacher 2012, personal communication; Herrera 2012, personal communication). Other than the Barba Azul Nature Reserve, there are no protected areas in the Llanos de Mojos except the Beni Biosphere Reserve, which has been in existence since 1986. However, to our knowledge, the blue-throated macaw does not use the Beni Biosphere Reserve (Hesse and Duffield 2000, p. 258).

In addition to conservation efforts, the NGCOs working in Bolivia are conducting field research to better understand the current state of this species. However, the conservation work is extremely difficult due to the various factors that affect the species. Because the species' habitat is flooded for 6 months of the year, monitoring its habitat is impossible during certain seasons (Berkunsky 2010, p. 5). There have also been discussions of reintroducing captive-raised birds into the wild; however, this practice could inadvertently introduce disease into the wild population if precautions are not taken to minimize the transmission of disease to other blue-throated macaws.

Another conservation measure in place is research on the motacú palm (Milpacher 2012, personal communication) because the number of motacú palms is decreasing. This palm species plays a significant role in the life cycle of the blue-throated macaw. One study found that the old and senescent motacú palms significantly exceed the younger palms (LPF 2003, p. 21). Based on their findings, researchers concluded that the islands containing motacú are not regenerating motacú palms sufficiently. It is likely that the lack of regeneration is due to over-grazing by cattle and excessive use of fire over centuries (Kyle 2006, p. 5). WPT has recently attempted several small scale palm germination experiments to assess reestablishing palm habitat (Milpacher 2012, pers. comm.). The motacú palm has commercial value in addition to its ecological role. Palm trees are used for a multitude of purposes such as thatch for housing, fruit, and palm oil (de la Torre *et al.* 2011, pp. 327–369; Zambrana *et al.* 2007, pp. 2771–2778). Motacú palm-dominated islands may have persisted in part due to their various ecological and commercial values, but they certainly persist in part because the islands are raised areas within the lowlands areas that are prone to flooding. With respect to the short-term, local researchers believe that there will be adequate motacú fruits in the

region for a few more decades (LPF 2003, p. 21); however, research on the motacú is vital to the conservation of the blue-throated macaw.

Educational awareness programs are in place in addition to research and monitoring. The Asociación Armonía is involved in an awareness campaign to ensure that the protection and conservation of these birds occurs at a local level (e.g., protection of macaws from trappers and the sustainable management of key habitats such as palm groves and forest islands, on their property) (Llampa 2007; BLI 2008a; Snyder et al. 2000). Two educational awareness centers have been established in the towns of Santa Ana del Yacuma and Santa Rosa del Yacuma (LPF 2010, p. 16). In response to the limited but continued poaching that occurs in the wild, LPF initiated a travelling exhibition, ''Extinction is Forever,'' which visited 17 urban localities in Bolivia in 2010 (LPF 2010, p. 15). The exhibition includes 21 photographs that explain the ancestral and present day relationship between people and birds, and highlights the effects of illegal trade of wild birds in Bolivia currently. An estimated 1,000 visitors attended each showing in the main cities (LPF 2010, p. 15).

In summary, the conservation efforts underway are abundant, but require significant effort. Reproductive success is vital to the blue-throated macaw recovery and this species faces many challenges to successfully reproducing. This species' nest often has an open crown (i.e. no roof) and is prone to flooding (Berkunsky 2010, p. 4; Kyle 2007a, p. 3). During many seasons, nests, eggs, and nestlings are destroyed due to flooding. Both WBT and Asociación Armonía have been conducting conservation activities such as installation of artificial nest boxes that provide safe habitat, manipulating nests so that they do not flood, and discouraging predators and nest competitors. The installation of a multitude and variety of nest boxes is a way to boost breeding success. Because many other species compete for these nest boxes, and blue-throated macaws tend to re-use previously-used nesting sites, the process of introducing nest boxes and encouraging blue-throated macaws to use them while discouraging other species from using them is a very time-intensive process. Despite all of these conservation efforts, fewer than 150 individuals of this species are believed to remain in the wild.

Other Factors

An additional factor that affects the nesting success of blue-throated macaws is the availability of food sources—not only the abundance of food, but the timing of its availability. Phenology (how the timing of plant life cycle events interacts with animal biological processes) is influenced by variations in climate. The timing of motacú palm fruit production is critical for various life stages of the blue-throated macaw, particularly during the period following hatching. The motacú palms, on which blue-throated macaws depend for nesting as well as feeding, are affected by drought, burning, and excessive rainfall. In years when there is significant drought or excessive rainfall, the fruiting abundance and timing of fruit production can significantly affect the success of nestlings, or it can prohibit blue-throated macaws from even attempting to nest (Kyle 2007). In some seasons when food is not as plentiful, breeding pairs may choose not to brood and the weakest of the nestlings are neglected by its parents and die of starvation (Kyle 2007a, pp. 4–5). During these times, in some cases, the diet is supplemented by these conservation organizations; however, it is a very intensive process.

In summary, there are many factors that are causing stress to this species' population. It is affected primarily by predation, nest flooding, and lack of nest sites. Combined with its reduced population size, the species lacks sufficient redundancy and resiliency to recover from present and future threats without intervention and intense conservation actions.

Finding (Proposed Listing Determination)

In assessing whether the blue-throated macaw meets the definition of a threatened or endangered species, we considered the five factors in section 4(a)(1) of the Act. A species is ''endangered'' for purposes of the Act if it is in danger of extinction throughout all or a significant portion of its range and is ''threatened'' if it is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. In considering what factors might constitute threats to a species, we must look beyond the mere exposure of the species to the factor to evaluate whether the species may respond to the factor in a way that causes actual impacts to the species. If there is exposure to a factor and the species responds negatively, the factor may be a threat and we attempt to determine how significant a threat it is. The threat is significant if it drives, or contributes to, the risk of extinction of the species such that the species may warrant listing as endangered or threatened as those terms are defined in the Act. We conducted a review of the status of this species and assessed whether the blue-throated macaw is threatened or endangered throughout all of its range. On the basis of the best scientific and commercial information, we do not find that the factors affecting the species are likely to be sufficiently ameliorated in the foreseeable future.

A multitude of factors has contributed to the decline of this species' population. In the past, factors that significantly reduced the number of blue-throated macaws included habitat loss and overutilization for the pet trade and museum specimens (NMNH 2012; Berkunsky 2010, p. 4; Kyle 2005, pp. 6–10). Currently, the primary factors that impact the blue-throated macaws are:

- Lack of adequate nest sites (both in abundance and effectiveness);
- Failure to adequately reproduce: nest (clutch) failure (when one or all of the nestlings fail to survive to fledgling stage due to a variety of reasons such as starvation, inadequate nutrition, sibling competition, or other reasons);
- Nest flooding (if nests are not monitored and manipulated);
- Botflies;
- Potential inbreeding which results in malformations and reduced fertility and loss of genetic variability due to a small population size (WCS *in litt.* 2011);
- Competition for nests with more competitive species such as bees and other avian species such as other macaw species; and
- Predation by numerous species, particularly birds of prey such as toucans, owls, vultures, other raptors, and even other macaw species (Berkunsky 2010, p. 4; Kyle 2006, p. 4, Loro Parque Fundación 2003, p. 28).

All of these factors combined make the blue-throated macaw exceptionally vulnerable to extinction. The historical, current, and ongoing threats to the blue-throated macaw have reduced the population such that it is extremely small, and the remaining pairs face many challenges to successfully reproduce offspring. The blue-throated macaw is currently at risk throughout all of its range due to historical impacts of the cumulative habitat loss that resulted from manipulation of its habitat over time, and the current practice of maintaining cattle pastures do not adequately allow palm species to regenerate. In addition, overutilization for the pet trade and museum specimens has reduced the status of the species to the point that its population is vulnerable to permanent extirpation from the wild. This species is more vulnerable to the effects of disease and

predation than it would have been otherwise. The species is also affected by stochastic events such as extreme weather events, which cause nest flooding and knock down trees where it has formed nests; we expect this to continue into the future.

Despite protections in place and educational awareness programs, this species is still occasionally being removed from the wild. A conservation plan was finalized in 2003 by several NGCOs and has been in place for almost 10 years. Even though intensive efforts to recover and conserve this species and its habitat by at least three NGCOs are underway, the recovery plan has not met its goals: the population of this species is still likely less than 150 in the wild. This species' life-history traits (such as the long investment time to raise nestlings, reproduction does not usually occur until age 6; and pairs generally mating for life), make it particularly susceptible to extinction. Additionally, its populations are small, its remaining suitable habitat is small, the population may lack genetic diversity which is causing malformations in nestlings, and the species is not reproducing sufficiently. These threats are currently impacting blue-throated macaw throughout its range and will likely continue in the future.

This species experienced a sharp population decline in the past few hundred years because it has been removed from the wild for various purposes, and now it faces a multitude of factors that negatively affect its ability to reproduce. Although removal of this species from the wild was detrimental to this species in the past, we found that international trade is no longer a factor currently influencing the species' status in the wild; however, limited poaching continues to occur. Illegal capture for the local pet trade is exacerbated by the other factors acting on the species. The regulatory mechanisms in place are inadequate to mitigate the factors that are negatively affecting the species. The lack of success of the species to increase its population indicates that the laws governing wildlife and habitat protection in Bolivia are inadequate to protect the species or to mitigate these threats.

In conclusion, we have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats affecting this species. Historically, the blue-throated macaw existed in much higher numbers in more continuous, connected habitat. As described above, there are many obvious factors that currently affect the blue-throated macaws. These include: inadequate nest sites (both in abundance and effectiveness), nest (clutch) failure (when one or all of the nestlings fail to survive to fledgling stage due to a variety of reasons such as starvation, inadequate nutrition, sibling competition), nest flooding, and botflies; competition for nests with more competitive species such as bees and other avian species such as large woodpeckers and other macaw species; and predation by numerous species, particularly birds of prey such as toucans, owls, vultures, other raptors, and even other macaw species.

Our review of the information pertaining to the five threat factors supports a conclusion that the imminence, intensity, and magnitude of the factors affecting the species occurs to an extent such that the threats to the blue-throated macaw, coupled with an extremely small population that has declined over the past few hundred years, place this species at risk of extinction throughout all of its range, such that a listing of endangered is warranted. The species is currently in danger of extinction because the species is at such low levels that it is vulnerable to stochastic environmental events, particularly predation and nest flooding. Given the species' low reproductive capacity and impaired genetic fitness, it is unable to increase to the levels of abundance that is able to withstand such events. We find that the blue-throated macaw is in danger of extinction now and, therefore, is appropriately listed as an endangered species. Therefore, we propose to list the blue-throated macaw as endangered under the Act.

Peer Review

In accordance with our joint policy with the National Marine Fisheries Service, ''Notice of Interagency Cooperative Policy for Peer Review in Endangered Species Act Activities,'' published in the **Federal Register** on July 1, 1994 (59 FR 34270), we will seek the expert opinions of at least three appropriate independent specialists regarding this proposed rule. The purpose of peer review is to ensure that our final determination is based on scientifically sound data, assumptions, and analyses. We will send copies of this proposed rule to the peer reviewers immediately following publication in the **Federal Register**. We will invite these peer reviewers to comment during the public comment period on our specific assumptions and conclusions regarding the proposal to list the blue-throated macaw.

We will consider all comments and information we receive during the comment period on this proposed rule during our preparation of a final determination. Accordingly, our final decision may differ from this proposal.

Available Conservation Measures

Conservation measures provided to species listed as endangered under the Act include recognition, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing results in public awareness, and encourages and results in conservation actions by Federal and State governments, private agencies and interest groups, and individuals.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to all endangered wildlife. These prohibitions, at 50 CFR 17.21, in part, make it illegal for any person subject to the jurisdiction of the United States to ''take'' (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or to attempt any of these) within the United States or upon the high seas; import or export; deliver, receive, carry, transport, or ship in interstate commerce in the course of commercial activity; or sell or offer for sale in interstate or foreign commerce any endangered wildlife species. It also is illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken in violation of the Act. Certain exceptions apply to agents of the Service and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving endangered wildlife species under certain circumstances. Regulations governing permits for endangered species are codified at 50 CFR 17.22. With regard to endangered wildlife, a permit may be issued for the following purposes: For scientific purposes, to enhance the propagation or survival of the species, and for incidental take in connection with otherwise lawful activities.

Clarity of the Rule

We are required by Executive Orders 12866 and 12988 and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

(a) Be logically organized;

(b) Use the active voice to address readers directly;

(c) Use clear language rather than jargon;

(d) Be divided into short sections and sentences; and

(e) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in the **ADDRESSES** section. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the names of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

National Environmental Policy Act (NEPA)

We have determined that environmental assessments and environmental impact statements, as defined under the authority of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.), need not be prepared in connection with regulations adopted under section 4(a) of the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

References Cited

A complete list of all references cited in this proposed rule is available on the Internet at *http://www.regulations.gov* or upon request from the Branch of Foreign Species, Endangered Species Program, U.S. Fish and Wildlife Service.

Author(s)

The primary author of this proposed rule is Amy Brisendine, Branch of Foreign Species, Endangered Species Program, U.S. Fish and Wildlife Service.

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Proposed Regulation Promulgation

Accordingly, we propose to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—[AMENDED]

■ 1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500; unless otherwise noted.

■ 2. Amend § 17.11(h) by adding a new entry for ''Macaw, blue-throated'' in alphabetical order under BIRDS to the List of Endangered and Threatened Wildlife to read as follows:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
*	*	*	*	*	*	*	
BIRDS							
*	*	*	*	*	*	*	
Macaw, blue-throated.	*Ara glaucogularis*	Bolivia	Entire	E	.....	NA	NA
*	*	*	*	*	*	*	

* * * * *

Dated: December 31, 2012.

Rowan W. Gould,

Director, U.S. Fish and Wildlife Service.

[FR Doc. 2013–00291 Filed 1–9–13; 8:45 am]

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 648

[Docket No. 120813331–2562–01]

RIN 0648–XC164

Magnuson-Stevens Act Provisions; Fisheries of the Northeastern United States; Northeast Multispecies Fishery; Proposed Rule To Implement a Targeted Acadian Redfish Fishery for Sector Vessels; Reopening of Comment Period

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Proposed rule; correction and reopening of comment period.

SUMMARY: This action reopens the comment period for an Acadian redfish-related proposed rule that published on November 8, 2012. The original comment period closed on November 23, 2012. This action clarifies a bycatch threshold incorrectly explained in the proposed rule. The public comment period is being reopened to solicit additional public comment on this correction.

DATES: The comment period for the proposed rule published November 8, 2012 (77 FR 66947), is reopened. Written comments must be received on or before January 22, 2013.

ADDRESSES: You may submit comments on this document, identified by NOAA–NMFS–2012–0183, by any one of the following methods:

• *Electronic Submissions:* Submit all electronic public comments via the Federal e-Rulemaking Portal. Go *to www.regulations.gov/#!docketDetail;D=NOAA-NMFS-2012-0183,* click the ''Comment Now!'' icon, complete the required fields, and enter or attach your comments.

• *Fax:* (978) 281–9135, Attn: William Whitmore.

• *Mail:* Paper, disk, or CD–ROM comments should be sent to John K. Bullard, Regional Administrator, National Marine Fisheries Service, 55 Great Republic Drive, Gloucester, MA 01930. Mark the outside of the envelope: ''Comments on Redfish Rule.''

Instructions: Comments sent by any other method, to any other address or individual, or received after the end of the comment period, may not be considered by NMFS. All comments received are a part of the public record and will generally be posted for public viewing on *www.regulations.gov* without change. All personal identifying information (e.g., name, address, etc.), confidential business information, or otherwise sensitive information submitted voluntarily by the sender will be publicly accessible. NMFS will accept anonymous comments (enter ''N/A'' in the required fields if you wish to