TRAFFIC USA

PARROT SMUGGLING ACROSS THE TEXAS-MEXICO BORDER

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Photo Credit: Ginette Hemley/WWF

WWF

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Executive Summary

The United States has until recently been one of the world's largest importers of wild parrots, or psittacines, and Mexico has consistently been a major supplier of wild-caught birds to the United States.

This report is intended to provide baseline information on the illegal bird trade across the U.S.-Mexican border in anticipation of changes in smuggling patterns that may result from two separate events---the passage of the North American Free Trade Agreement (NAFTA) and the Wild Bird Conservation Act (WBCA). NAFTA went into effect on 1 January 1994, and with it came an increase in cross-border trade. WBCA was enacted in October 1992 to promote the conservation of exotic birds by restricting U.S. imports and assisting conservation and management programs in countries of origin. The combination of an increase in trade under NAFTA (and the resulting increase in opportunities for smuggling) and a reduction in legal supply of imported birds caused by WBCA (and the resulting increase in incentives for smuggling) raised the possibility of an increase in smuggling of parrots from Mexico to the United States. This report provides the data with which post-WBCA/NAFTA trade data can be compared in order to evaluate whether such an increase in smuggling occurs.

Although the primary intent of this report is to provide data for a subsequent analysis of the impacts of NAFTA and WBCA on the level of parrot smuggling, it also serves to highlight the fact that smuggling along the Texas-Mexico border remains an issue of serious conservation concern. Despite the lack of reliable data on the exact number of parrots smuggled across the US-Mexican border, ongoing bird seizures demonstrate that the southern border is a common and probably the most widely used route for illegal importation of parrots into the United States.

There is clearly a continuing need for additional vigilance and cooperation between U.S. and Mexican law enforcement agencies to stem the illegal parrot trade. The authors recommend that the U.S. and Mexican governments undertake annual reviews of parrot confiscations at the border in order to detect temporal and geographic trends and dedicate enhanced law enforcement efforts accordingly, and launch a focused a public awareness campaign about the illegal parrot trade and the ramifications of buying birds collected illegally from the wild. In addition, the authors recommend that the United States Fish and Wildlife Service promptly issue regulations that are still pending under WBCA for the approval of foreign captive-breeding facilities, thereby encouraging captive-breeding of parrots for the pet trade. Finally, the authors recommend that the Exotic Bird Conservation Fund established under the WBCA be funded, and that the USFWS support field-based scientific research on parrots of particular conservation concern.

I. Introduction

Parrots, or psittacines — species of the order Psittaciformes — make up a large part of international trade in wild birds. Between 1982 and 1988, 25 percent (4.2 million individuals) of all reported worldwide trade in wild birds consisted of parrots (Fitzgerald 1989; Thomsen and Brautigam 1991). The importance of psittacines in international wildlife trade stems from their beauty, bright colors, ability to learn to talk, and their tendency to bond with humans — characteristics that make them valued pets and ideal species for the cage-bird industry (Thomsen and Mulliken 1992).

The United States has until recently been one of the world's largest importers of wild psittacines, and Mexico has consistently been a major supplier of wild-caught birds to the United States. Most commercial exportation of Mexican wildlife was prohibited in 1982, but illegal trade in parrots from Mexico to the United States has continued. Smuggling by land across the U.S.-Mexican border has been an important channel for this trade (Iñigo and Ramos 1991).

TRAFFIC USA, the joint wildlife trade monitoring program of the World Wildlife Fund and the International Union for the Conservation of Nature (IUCN-The World Conservation Union), has long been concerned about the smuggling of parrots and other wildlife across the US-Mexican border. In 1986, TRAFFIC USA undertook a broad review of the U.S.-Mexican wildlife trade, highlighting the parrot trade as a key conservation issue (TRAFFIC-USA 1986). In August 1988, TRAFFIC USA and World Wildlife Fund convened the Cooperative Working Group on Bird Trade, comprised of representatives of conservation and avicultural organizations, the pet industry, animal welfare groups, and zoos to analyze imports of exotic bird species into the United States and recommend measures to reduce mortality and control harmful commerce in wild-caught birds for the pet trade. In 1991, TRAFFIC USA published an analysis of the potential effects of the North American Free Trade Agreement on U.S.-Mexican trade in parrots and other wildlife (Rose 1991). In 1993 and 1994, TRAFFIC USA supported research projects documenting the status of exploited psittacines and the conservation impacts of parrot trade in Honduras (Wiedenfeld 1993), Nicaragua (Wiedenfeld 1995), and Mexico (Enkerlin and Packard 1993), with funding from the U.S. Fish and Wildlife Service (USFWS) and the Secretariat of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

This report is intended to provide baseline information on the illegal bird trade across the U.S.-Mexican border in anticipation of changes in smuggling patterns that may result from two separate events — the passage of implementing legislation for the North American Free Trade Agreement (NAFTA) and the Wild Bird Conservation Act (WBCA). NAFTA came into effect on 1 January 1994, and with it came an increase in cross-border trade. WBCA was enacted in October 1992 to promote the conservation of exotic birds by restricting U.S. imports and assisting conservation and management programs in countries of origin. The combination of an increase in trade induced by NAFTA (and the resulting increase in opportunities for smuggling) and a reduction in supply of imported birds induced by WBCA

(and the resulting increase in incentives for smuggling) raised the specter of an increase in smuggling of parrots from Mexico to the United States. This report provides data from 1990 through 1993 with which post-WBCA/NAFTA trade data can be compared to determine whether an increase in smuggling has occurred.

The authors originally intended to review smuggling along the entire U.S.-Mexican border. However, the scope of the report was narrowed to a review of trade across the Texas-Mexico border because of difficulties in obtaining bird seizure[1] data for other border states from the federal government. A future review of comparable data for the California border would be useful because the market for parrots in southern California is substantial. In addition, the data in this report, two years old at the time of publication, are already out of date, as is often the case when using official statistics for trade reviews. Because the process of obtaining seizure data involves time-consuming interviews with border officials, the data cannot be updated at this time.

The objectives of this review are to estimate the extent of parrot trade across the Texas-Mexico border and to evaluate the monitoring and control capabilities of U.S. and Mexican agencies at the border. The study draws on the following sources of information: (1) a review of U.S. and Mexican legislation and regulations governing domestic and international trade in wild-caught psittacines; (2) a review of existing studies concerning the economic and social context of trade in neotropical parrots; (3) compilation and analysis of data on seizures of illegally-traded parrots in the border region; and (4) interviews with personnel of the U.S. Fish and Wildlife Service (USFWS), the U.S. Customs Service, and the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) — the government agencies charged with monitoring and controlling wild bird trade in the border region.

II. The International Trade of Neotropical Psittacines

International trade in protected species of wildlife is regulated by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Of the 330-odd species of psittacines, more than 40 species and subspecies are considered threatened and are listed in CITES Appendix I, which prohibits their commercial trade. All remaining species but 3 are listed in CITES Appendix II, which requires monitoring of commercial trade.

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[1] The terms "seized" and "confiscated" are used interchangeably in this report. Technically, the term "seized" refers to the point at which a law enforcement officer initially takes possession of a shipment, and "confiscation" refers to the point at which a determination has been made that the shipment is illegal, and it becomes U.S. government property. However, since over 99 percent of the seized birds are also confiscated, the distinction is not relevant for the purposes of this report.

Nevertheless, continued trade, illegal and often detrimental, is recognized as a major factor threatening the survival of numerous psittacine species (Collar and Juniper 1992).

The United States, the European Union, and Japan have historically been the most important importers of psittacines, although U.S. imports declined precipitously in 1993 as the result of the restrictions imposed under WBCA. During the 1980s, U.S. imports accounted for nearly half of all psittacines reported in international trade, and up to 80 percent of the neotropical psittacines reported in trade (Thomsen and Mulliken 1992). Between 1981 and 1985, the United States officially imported 703,000 neotropical parrots, representing 96 of the 141 psittacine species of the region (Jorgenson and Thomsen 1987).

Until the early 1970s, the major suppliers of neotropical parrots to world markets were Peru, Colombia, Paraguay, and Mexico. From 1973 to 1982, export bans in Colombia (1973), Paraguay (1975), and Mexico (1982) shifted the official trade to Bolivia and Argentina. After Bolivia also banned exports in 1984, Argentina became the largest supplier of legally exported parrots. Other former exporting countries, including Belize, Brazil, Costa Rica, Ecuador, French Guiana, Guatemala, Guyana, Honduras, and Venezuela, also officially prohibited commercial exports of indigenous wild-caught parrots in the mid 1980s. Despite these domestic export bans, illegal trapping and smuggling appear to continue (Thomsen and Mulliken 1992).

In Mexico, commercial exportation of most wildlife, including psittacines, has been prohibited since 20 September 1982. Trapping and commercialization of wild-caught birds within Mexico is still permitted under annual regulations addressing capture, transport, and sale. The number of species that can be collected legally and the number of regions in which collecting is allowed have been gradually reduced. During the 1993—94 season, for example, capture of only eleven psittacine species was permitted. When Mexico acceded to CITES in 1991, international wildlife trade involving Mexico became subject to the convention's provisions.

In the United States, the Endangered Species Act (ESA) serves as the implementing legislation for CITES and covers all CITES-listed species. In addition, the ESA provides that species listed as endangered cannot be imported or sold in interstate commerce. Many species listed in CITES Appendices I and II also appear on the U.S. endangered species list, but the two lists are not identical. These provisions are complemented by the Lacey Act, which prohibits trade in wildlife taken or possessed in violation of the laws of the country of origin, and by the Wild Bird Conservation Act (WBCA), signed into law on 23 October 1992. WBCA is intended to promote the conservation of exotic wild birds by ensuring that bird imports into the United States are biologically sustainable and not detrimental to the species; ensuring that imported birds are not subject to inhumane treatment during capture and transport; and assisting wild bird conservation and management programs in countries of origin. WBCA prohibits the importation of CITES-listed birds except as follows: The act allows (pursuant to USFWS regulations) the importation of wild-caught birds collected under conservation plans approved by USFWS, and captive-bred birds raised in facilities approved

by USFWS. The Act also allows for the importation of a limited number of birds for zoos, scientific study, and captive-breeding programs. Exception is also made for the importation of birds acquired as personal pets by U.S. citizens while residing abroad.

It was the intent of Congress that regulations allowing the importation of parrots under these exceptions would be in place by October 1993 when the general prohibition took effect, or shortly thereafter. No regulations had been issued as of that date. However, on 16 November 1993, USFWS issued regulations allowing imports of birds for zoos, scientific study, captive breeding programs and of previously-owned personal pet birds; followed on 2 December 1994 by a regulation on imports of 36 parrot species that are not taken from the wild for trade. Regulations for the importation of wild-caught birds collected pursuant to sustainable management plans were not issued until 24 January 1996, and regulations have yet to be issued for the approval of foreign captive-breeding facilities from which parrots can be imported. The WBCA has drastically reduced the volume of commercial imports. In 1992, 158,022 CITES-listed birds were legally imported into the United States, compared to only 12,565 birds in 1994.

III. U.S.-Mexican Cross-Border Smuggling

The practice of capturing and trading wild birds as pets is a Mexican tradition dating back to the Mayan and Aztec civilizations.

The Mexican Parrot Trade

In 1981, the bird trade was estimated to employ more than 10,000 heads of households and generated more than US$2 million annually (Castillo and Muñoz 1981). So entrenched a practice is the capture and domestic sale of birds that it was the only explicit exception to the 1982 ban on the commercialization of native Mexican wildlife. (Exportation of parrots from Mexico is illegal, except for purposes of scientific research.) In 1982—83, a reported 104,530 psittacines were captured in Mexico for domestic sale (Iñigo 1986). Of the 22 parrot species indigenous to Mexico, 4 are listed in CITES Appendix I, and all the others are in Appendix II. (See Table 1 and Appendix A.)

Table 1 • Psittacine Species Indigenous to Mexico

Species Name[1]	English Name[2]	CITES
Aratinga holochlora *	Green Parakeet	II
Aratinga strenua	Pacific Parakeet	II
Aratinga brevipes *	Socorro Parakeet	**
Aratinga nana	Aztec Parakeet, Olive-throated Parakeet	II
Aratinga canicularis	Orange-fronted Parakeet	II
Ara militaris	Military Macaw	I
Ara macao	Scarlet Macaw	I
Rhynchopsitta pachyrhyncha	Thick-billed Parrot	I
Rhynchopsitta terrisi *	Maroon-fronted Parrot	I
Bolborhynchus lineola	Barred Parakeet	II
Forpus cyanopygius *	Mexican Parotlet, Blue-rumped Parotlet	II
Brotogeris jugularis	Orange-chinned Parakeet	II
Pionopsitta haemototis	Brown-hooded Parrot	II
Pionus senilis	White-crowned Parrot	II
Amazona albifrons	White-fronted Parrot	II
Amazona xantholora	Yucatan Parrot, Yellow-lored Parrot	II
Amazona viridigenalis *	Red-crowned Parrot	II
Amazona finschi *	Lilac-crowned Parrot	II
Amazona autumnalis	Red-lored Parrot, Yellow-cheeked Parrot	II
Amazona farinosa	Mealy Parrot	II
Amazona oratrix	Yellow-headed Parrot	II
Amazona auropalliata	Yellow-naped Parrot	II

Notes: * Endemic to Mexico.
[1] Sibley and Monroe 1990, Collar, Gonzaga, Krabbe, Nieto, Naranjo, Parker, and Wege 1992.
[2] Howard and Moore 1980.
** The Mexican Government considers this to be a separate species of *Aratinga*, although CITES still considers it a sub-species of the Appendix II *Aratinga holochlora*.

Prices for parrots vary according to the popularity of the species as pets and the age class and "talking skills" of the individual bird. Highly popular pet species, such as the yellow-headed amazon (*Amazona oratrix*), are among the most valuable; traders have even bleached the head feathers of other species to resemble yellow-heads (Anonymous 1985). Although nestlings are typically more valuable than adults because they can be habituated to humans, a "talking" adult bird may bring twice the amount of a nestling.

Prices for parrots increase steeply along the market chain. For example, a scarlet macaw (*Ara macao*, a CITES Appendix I species) may bring less than $20 to the trapper, $450 in Mexico City markets, and up to $4,000 in U.S. pet stores (Iñigo and Ramos 1991). In 1986, collectors of yellow-headed amazons and red-crowned amazons (*Amazona viridigenalis)* in Tamaulipas received $10 and $2, respectively, while prices in Mexico City were $130 and $57 (Pérez 1986, cited in Rose 1993). In 1989, collectors in Tamaulipas received less than $20 for yellow-headed amazons, but prices reached $250 on the U.S. border and at least twice that amount in the U.S. interior (Vásquez 1990, cited in Rose, 1993). In 1991—1992, yellow-headed amazons still sold for under $30 in domestic markets but cost some $800 in the United States (Bergman 1991). In 1992, prices paid by middlemen to trappers for Amazon parrots in Tamaulipas, Mexico ranged from $10 to $32 per bird. The middlemen sold the same birds across the border at $100 to $400 each. Once in the U.S. market, amazons go for $250 to $1,200 each (Enkerlin and Packard 1993).

Enkerlin and Packard (1993) estimate an annual harvest rate of 350 to 600 parrots from their study area — a working cattle ranch near a 350-hectare forest on the coastal plain in the state of Tamaulipas, Mexico. A collector selling 8 nestlings per breeding season to a regional middleman might earn $104 for red-lored amazons (*A. autumnalis*) and red-crowned amazons and $216 for yellow-headed amazons, an average of $13 to $27 per bird, depending on the species. A farmer who sells birds directly in local village markets might receive $16 to $26 for the less valuable species and $32 to $48 for yellow-headed amazons.

Rising prices for amazons may reflect their increasing scarcity and do not necessarily reflect increasing income to collectors. Trappers in Tamaulipas reported finding a nest used to take 2 days of searching in 1986 but, by 1989, required more than a week. Therefore, if prices received by collectors rose from $10 in 1986 to $30 in 1992 (and assuming 2 birds per nest), the collectors would have collected 14 birds and received $140 over a 2-week period in 1986, but only 4 birds and $120 over a 2-week period in 1992. Although large-scale traders may compensate for depletion by shifting species and geographical concentration of suppliers, these prices remain sufficiently high to ensure continued effort by trappers to capture the few remaining birds, albeit at decreasing rates of return (Rose 1993). For Tamaulipan farmers, sales of amazon parrots may represent the equivalent of up to 2 months' wages in each parrot-nesting season (Enkerlin and Packard 1993).

The incentive to capture wild parrots from declining populations remains even though middlemen garner much of the birds' final value. Reports from Honduras (Wiedenfeld 1993)

indicate that in 1989, yellow-naped amazons (*A. auropalliata*) were sold by the collectors, the Miskito Indians, to middlemen for about $25 per bird. For the same bird, profits ranging from 13 percent to 28 percent are obtained by other middlemen in successive transactions of $65, $100, $145, and up to $200.

Crossing the Border

Many of the parrots captured in Mexico make their way across the U.S. border. From 1970 to 1982, a total of 133,300 psittacines were reported as entering the United States from Mexico (Iñigo and Ramos 1991). Since Mexico's ban on bird exports in 1982, the only available international trade statistics have been USFWS data on seizures of illegally imported psittacines. These data are undoubtedly incomplete since information from USFWS case files often is not entered into the USFWS database, and not all federal agencies provide USFWS with information on seizures. In 1983, USFWS data included seizures of 78 red-crowned amazons, which are endemic to Mexico, and 8 yellow-headed amazons, considered an endangered species by Birdlife International (Brautigam, 1986).

The cross-border smuggling of parrots is not limited to birds captured within Mexico; many commonly traded psittacines range from northern Mexico into Central and South America.

The species most commonly confiscated at the U.S.-Mexican border are amazons, (yellow-naped, yellow-headed, red-crowned, red-lored, and lilac-crowned); conures (*Aratinga* spp.); and white-capped parrots (*Pionus senilis*). (See Table 2.) The smuggling of amazons typically involves juvenile birds, often obtained by cutting down or hacking apart nesting trees (Mario Ramos personal communication, 1994). Smuggling of indigenous amazons appears to be seasonal, peaking in March after the spring hatching. Chicks are easier to smuggle and launder as captive-bred hatchlings and more highly valued than adult birds in the trade. Adult macaws are smuggled across the border throughout the year. Toucans (Ramphastidae) and macaws (*Ara* spp.) are popular in domestic trade despite their protected status but, for unknown reasons, do not appear as frequently in records of seizures.

For lack of reliable data, it is impossible to determine the number of parrots smuggled annually into the United States from Mexico. The wide discrepancy between the following official estimates reflects this difficulty. Ten years ago, a Justice Department source estimated the annual number of parrots smuggled from Mexico into the United States to be as high as 150,000. In the 1980s, the estimates of 25,000 by APHIS, which is responsible for the quarantine of all live bird imports and therefore a reliable source of information on smuggled birds) was much lower. USFWS border personnel have provided recent estimates of smuggling across the Texas-Mexico border. According to one USFWS agent, smugglers interrogated in three separate law enforcement cases each estimated that some 20,000 to 25,000 birds were moved over a 1-year period in the Rio Grande Valley. Though not completely reliable, these Rio Grande figures were corroborated independently by several individuals knowledgeable about the trade.

According to border officials, the illegal trade in parrots across the border consists of a mix of opportunistic and organized smuggling. In the case of organized smuggling, parrots may be collected to fulfill a specific order or may be retained by middlemen awaiting orders from U.S. clients. The parrots collected may have been trapped in Mexico, Central America, South America, or the Caribbean. The trappers may be professionals or farmers who supplement their income by trapping a small number of birds. Whatever the case, trappers may take the birds to a local collection point or wait for a buyer to make his rounds. Enkerlin and Packard (1993) reported that peasant farmers in Tamaulipas may take amazon nestlings from three or four nests per season (an average of two nestlings per nest), and sell them to a regional buyer. Less frequently, the farmer may sell them directly in small village markets. There is no indication that local farmers themselves market birds outside their region.

The most common means for bringing the birds into the United States is transporting them overland across the border, although Enkerlin and Packard (1993) note that parrots may also be shipped by small aircraft or fishing vessels.

When the birds are ready to be transported across the Rio Grande, the services of a "mule" are usually employed. Mules are individuals who smuggle birds or any other contraband on a regular basis, apparently without any attempt to stay in the United States. Mules may carry from one to a hundred parrots at a time, and according to USFWS agents, typically receive $5 to $10 per bird. The birds may be smuggled across in containers aboard rafts, often right under bridges staffed by U.S. customs inspectors. USFWS agents say that customs personnel are usually too busy with traffic on the bridge to look for smugglers underneath. Other methods include strapping the parrots to a mule's body or stuffing them into vehicle compartments. Once in the United States, smuggled parrots are generally kept in towns near the border awaiting clients or distribution to internal U.S. markets.

If caught, mules may be released with a warning and sent back to Mexico. Law enforcement officials often choose to avoid prosecution in such cases due to limited resources. When prosecution does occur, mules may refuse to divulge information about their contacts, even at the risk of serving 9 to 12 months in jail. Upon release, the silent mule's reputation as a trustworthy individual increases his value as a smuggler (Craig Tabor and Marty Hernandez personal communication, USFWS).

Law Enforcement Capabilities Along the Border

Wildlife law enforcement coverage along both sides of the border is inadequate. In 1991, the Mexican government employed only 25 wildlife inspectors to enforce its wildlife laws nationwide. However, on 1 July 1996 the government began to station wildlife inspectors at its 94 ports of entry beginning. Although the accession of Mexico to CITES in 1991 marked an important step in efforts to address the illegal trade in wildlife, developing infrastructure and training personnel for the full implementation of the convention will take some time.

On the U.S. side, a shortage of USFWS resources has traditionally limited law enforcement along the Texas-Mexico border. USFWS is in charge of enforcing and administering legislation (11 laws and 5 international treaties) governing the importation and exportation of fish and wildlife species, parts, and products (GAO 1991). USFWS stations wildlife inspectors at a limited number of ports of entry to control wildlife imports and exports and also employs special agents, charged with investigating illicit wildlife-related activities. Agents and inspectors in the border region are responsible not only for monitoring illegal trade in wildlife along 1,800 miles of sparsely developed country, where opportunities for smuggling abound, but also for enforcing compliance with the hunting provisions of the Migratory Bird Act and other wildlife regulations.

Wildlife shipments may legally enter or leave the United States through any of 13 designated ports or, in certain cases, through any of 36 non-designated ports. During the 4-year period covered by this report, Texas had 1 designated port (Dallas/Ft. Worth), 3 non-designated border ports (El Paso, Brownsville, and Laredo), and 1 non-designated port away from the border (Houston). Nine wildlife inspectors were stationed at Texas ports in 1990-93: 4 in Dallas/Fort Worth, 2 in El Paso, 2 in Houston, and 1 in Laredo. This number was increased in 1994 to 10 inspectors and in 1995, to 12 inspectors: 4 in Dallas/Ft. Worth, 3 in El Paso, 3 in Houston, 1 in Laredo, and 1 in Brownsville. In addition, until 1993, 3 special agents were stationed along the Texas-Mexico border. Currently, 5 special agents are stationed in McAllen, Laredo, and El Paso. Nationwide, USFWS employs 225 special agents and 74 inspectors. In Texas, there are 2 USFWS special agents in McAllen and 1 each in Laredo and Del Rio; and 1 inspector in Laredo and 1 in Brownsville.

USFWS officers usually seek and receive cooperation from other agencies (especially Border Patrol and Customs Service) to enforce wildlife laws. These agencies provide USFWS officers with intelligence information and notification of wildlife-related incidents. However, these cooperative efforts are highly dependent on strong interagency contacts and personal motivation among non-USFWS agents. Moreover, the resources of other agencies are limited. Customs agents receive only a single day of wildlife-related training during their basic training, and their opportunity to search vehicles is limited. According to Marcus (1992), customs agents are able to search only 5 percent of the more than 13 million vehicles passing over three bridges from Ciudad Juarez into El Paso each year.

Birds illegally brought into the United States are subject to seizure by any one of several agencies, including USFWS, Customs, Immigration, Border Patrol, or state law enforcement agencies. Seized birds are quarantined in accordance with U.S. Department of Agriculture regulations and kept in APHIS facilities. (Before passage of WBCA, private facilities approved by APHIS also provided quarantine service.) Once the birds have cleared quarantine, they are transferred to other institutions or sold at government auction (unless they are listed as threatened or endangered under the ESA, or listed in CITES Appendix I). The revenues thus raised are used to cover quarantine-related expenses. In addition, seized birds are reported to the Law Enforcement Management Information System (LEMIS), a

computerized information system maintained by USFWS Law Enforcement Division. To avoid reporting the same bird twice and to track its destination, confiscated birds are individually identified and assigned a numbered band by APHIS.

According to data collected by TRAFFIC, border agents along the Texas border seize an average of 600 birds annually. However, this figure may be inaccurate because data on seizures can be problematic: APHIS personnel often lack training to identify birds correctly; smuggled birds are not accompanied by any official import records, and reporting of seized birds appears to be sporadic. Furthermore, smuggled birds that are dead on arrival before the official quarantine begins often go unrecorded.

IV. Parrot Smuggling Across the Texas-Mexico Border: An Analysis Based On Confiscation Records

Smuggling of parrots across the US-Mexico border is likely to remain significant because of strong U.S. demand for parrot species from Mexico, the resulting high market values, and insufficient enforcement staff on both sides of the border. The precise volume of illegal trade is impossible to determine, but confiscation records allow assessment of its composition and trends over time. This section presents an analysis of the illegal parrot trade across the Texas-Mexico border in 1990—93, based on records of confiscated birds, obtained from the four U.S. federal agencies working at the border. The analysis does not attempt to derive an estimate of the total number of parrots smuggled into the United States during those years. Rather, it provides quantitative information useful to determine some characteristics of the unlawful trade in psittacines along the Texas-Mexico border.

Methods

The records of psittacines confiscated along the Texas-Mexico border that were used in this analysis were provided (via the Freedom of Information Act) by USFWS, the U.S. Customs Service (USCS), the U.S. Border Patrol (USBP), and APHIS. Confiscated parrots included in the analysis were those birds imported as concealed contraband or without required documentation.

Records provided by APHIS consisted of: Declaration Form OMB No. 0579-0040, which records the date and location of the seizure, the number and species involved in the illicit activity, and the origin of the bird(s); and quarantine summary forms, which describe the number and species quarantined, the number of birds dead on arrival at the quarantine station, and any mortality occurring during the quarantine period. Quarantine summary forms do not include the date of the seizure, the date of arrival at the quarantine station, or the location of the seizure.

Records provided by USFWS (Declaration Form 3-177), Customs Service (Form 4607 and Form 6051) and Border Patrol (Form 1-44) include: the date and location of the seizure,

the number and species confiscated, and a brief description of the circumstances in which the seizure took place. All reporting forms indicate the individual tag and lot numbers assigned to confiscated birds.

Psittacines confiscated along the Texas-Mexico border are usually reported by the various agencies under the common names of the birds, a procedure that can lead to misidentification. The following procedure was therefore adopted for this analysis: When the same bird was reported under different common names by different agencies, the common name reported by APHIS was adopted. Scientific names were then assigned according to Sibley and Monroe (1990), the taxonomic reference used by CITES since 1992. Because more than one agency may report the same bird, records from all agencies were combined in a single data base and cross-checked to weed out duplication. The total number of psittacines confiscated is indicated here without specifying the agency that carried out the seizure. Additional information on seizures for the entire country for the period 1990—93 were obtained from LEMIS, the USFWS computerized Law Enforcement Management Information System.

Table 2 • Parrots Seized Along the Texas - Mexico Border, 1990-93

Species Name	Native to Mexico?	Collection Allowed in Mexico?[1]	1990	1991	1992	1993	Total	%
Amazona auropalliata	✔		2	137	215	294	648	26.6
Amazona oratrix[2]	✔		66	121	281	74	542	22.0
Amazona viridiginalis	✔		177	70	61	29	337	13.7
Aratinga holochlora	✔	✔	156	59	14	24	253	10.3
Amazona autumnalis	✔	✔	76	24	50	15	165	6.7
Amazona finschi	✔		85	23	29	12	149	6.0
Aratinga canicularis	✔	✔	32	41	37	27	137	5.5
Pionus senilis	✔		15	9	31	0	55	2.2
Amazona albifrons	✔	✔	23	10	7	8	48	1.9
Ara militaris	✔		2	12	7	12	33	1.3
Aratinga spp.	✔	✔3	13	5	0	10	28	1.2
Amazona spp.	✔	✔4	17	2	2	5	26	1.1
Amazona farinosa	✔		5	1	2	0	8	0.3
Cacatua spp.	5		0	7	0	0	7	0.3
Brotogeris jugularis	✔	✔	1	5	0	0	6	0.2
Nymphicus hollandicus	6		1	0	0	4	5	0.2
Amazona ochrocephala	✔		2	1	1	0	4	0.2
Ara macao	✔		0	3	1	0	4	0.2
Bolborhynchus lineola	✔	✔	2	0	0	0	2	0.1
Ara chloropterus	7		0	2	0	0	2	0.1
Psittacus erithacus	8		0	0	2	0	2	0.1
Ara ararauna	7		0	1	0	0	1	0.05
TOTAL			675	535	740	514	2464	100

Key: ✔ = Yes

1 = *During the calendar year1993*

2 = *Amazona oratrix* is sometimes considered a race of *Amazona ochrocephala.*

3 = Seasonal collection of *Aratinga holochlora, nana* and *canicularis* is allowed in some Mexican states. Collection of other Aratinga species is illegal.

4 = Seasonal collection of *Amazona autumnalis* and *albifrons* is permitted in some Mexican states. Collection of other Amazona species is illegal.

5 = *Cacatua* spp. are indigenous to Southeast Asia, particularly Australia, Indonesia, and the Philippines.

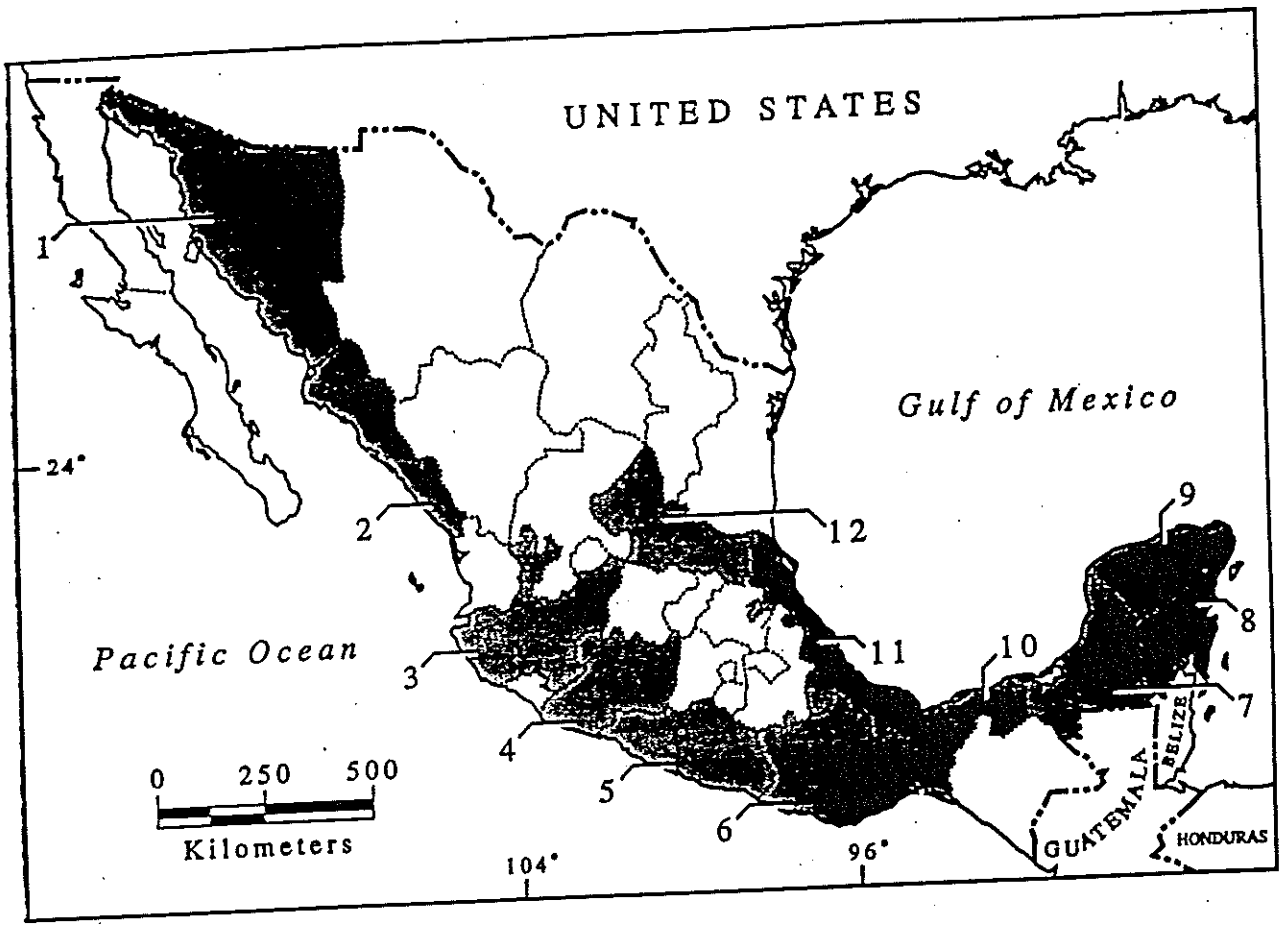
6 = *Nymphicus hollandicus* occurs in Australia and is commonly captive-bred.

7 = *Ara chloropterus* and *Ararauna* occur in Central and South America.

8 = *Psittacus erithacus* occurs in West and Central Africa.

Sources: 1990-93 seizure records of USFWS, U.S. Customs Service, U.S. Border Patrol, and APHIS plus Sibley, and Monroe, 1990, and Secretaria de Desarrollo Social. July 1, 1993. *Diario Oficial de la Federacion.*

Figure 1 • Mexican States that Permitted the Capture of Psittacines in 1993



1 Sonora
2 Sinaloa
3 Jalisco
4 Michoacan
5 Guerrero
6 Oaxaca
7 Campeche
8 Quintana Roo
9 Yucatan
10 Tabasco
11 Vera Cruz
12 San Luis Potosi

Note: Based on the 1993 Calendar for the Collection, Transport, and Rational Development of Ornate Birds.
Source: Secretaría de Desarollo Social, Calendario para la Captura, Transporte y Aprovechamiento Racional de Aves Canores y de Ornato, July 1, 1993, *Diario Oficial de la Federación.*

Results

Species Trends. Seven species accounted for 91 percent of all seized birds: yellow-naped amazon, 27 percent; yellow-headed amazon, 22 percent; red-crowned amazon, 14 percent; green conure (*Aratinga holochlora*), 10 percent; red-lored amazon, 7 percent; lilac-crowned amazon (*Amazona finschi*), 6 percent; and orange-fronted conure (*Aratinga canicularis*), 5 percent. Confiscations of yellow-naped amazons increased in 1990—93. Confiscations of yellow-headed amazons increased from 1990 to 1992, and dropped sharply during 1993 (Table 2). The yellow-naped amazon emerged in 1993 as the most common illegally traded species, accounting for 57 percent of all psittacines seized that year. The number of seized specimens of the other most commonly confiscated species show a decreasing trend, except for the orange-fronted conure which remained stable (Table 2).

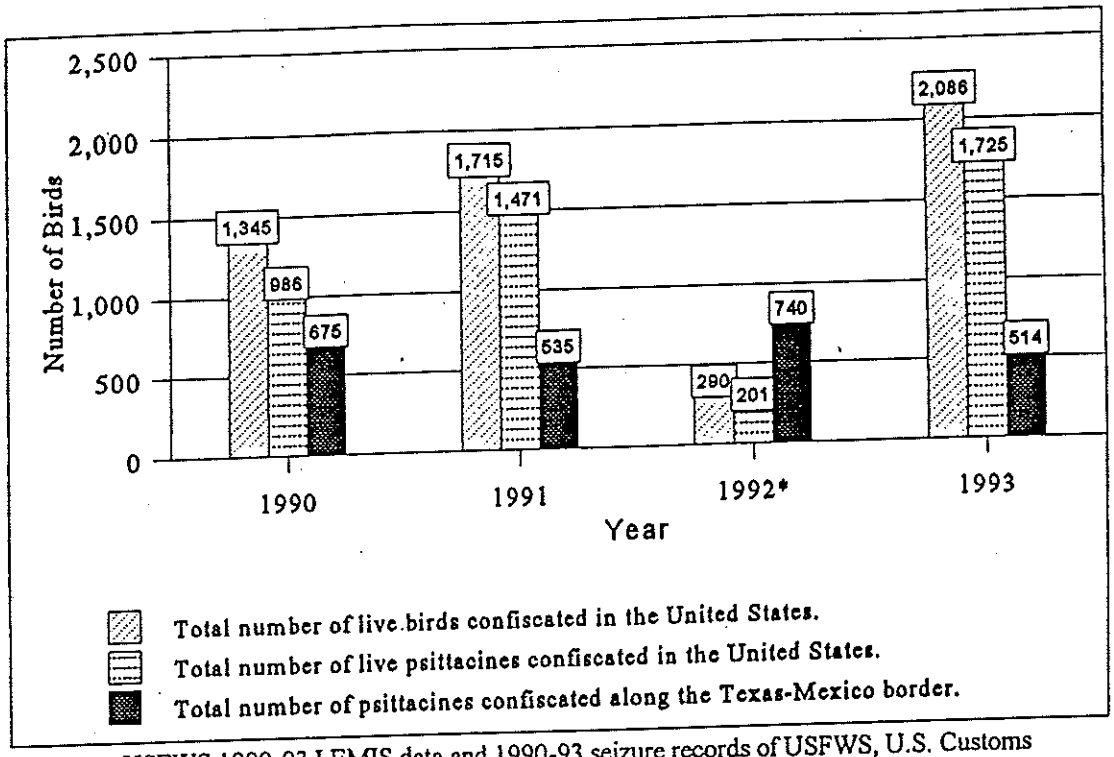
Volume and Composition of Seizures. At least 2,464 parrots were seized along the Texas-Mexico border in 468 reported incidents from January 1990 to December 1993, according to government records (Table 2).

The number of psittacines confiscated on the Texas-Mexico border averaged 616 specimens per year. Confiscations on the border peaked at 740 in 1992, followed by a sharp drop, to 514 birds, in 1993. The large number of confiscations in 1992 may reflect an effort to smuggle birds into the United States before WBCA was passed and the moratorium on trade took effect.

These seizures involved a total of 22 taxa. The total number of taxa seized by year decreased from a maximum of 17 in 1991 to 12 in 1993 (Table 2). Almost all (99 percent) of the seized birds were reported as originating in Mexico and included 14 of the 22 psittacine species indigenous to Mexico. Seizures included two CITES Appendix I species — military macaw (*Ara militaris*) and scarlet macaw, as well as two species considered vulnerable by IUCN — the red-crowned amazon and the yellow-headed amazon (Collar, Crosby, and S., 1994). The remainder consisted of birds that are not native to Mexico, such as Asian cockatoos (*Cacatua* spp.), cockatiels (*Nymphicus hollandicus*), African grey parrots (*Psittacus erithacus*), blue and yellow macaws (*Ara ararauna*), as well as other parrot species that also occur in Central and South America (Table 2). Incomplete data and missing information about the origin of these birds preclude use of these data to assess the impacts of trade on individual species of parrots.

In seven incidents, non-psittacine species were reported as being smuggled with parrots. The non-psittacine species included finches (15 specimens), toucans (4 specimens), canaries (4 specimens), and cardinals (4 specimens). Contrary to common perceptions of the trade, these documented bird smuggling attempts were not connected with drug smuggling. On only one occasion has an attempt to smuggle drugs (marijuana) with psittacines been reported.

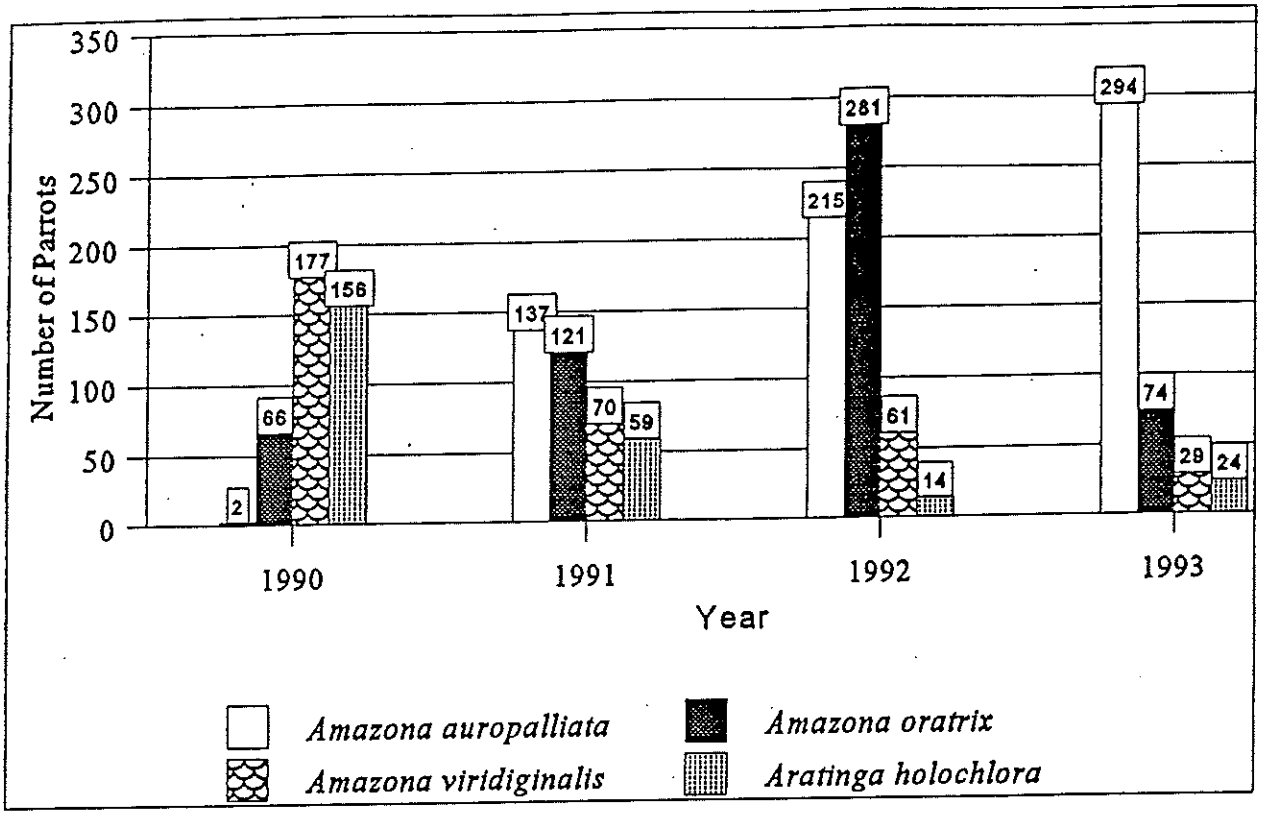
Figure 2 • Live Birds Confiscated in the U.S., 1990-93



Sources: USFWS 1990-93 LEMIS data and 1990-93 seizure records of USFWS, U.S. Customs Service, U.S. Border Patrol, and APHIS.

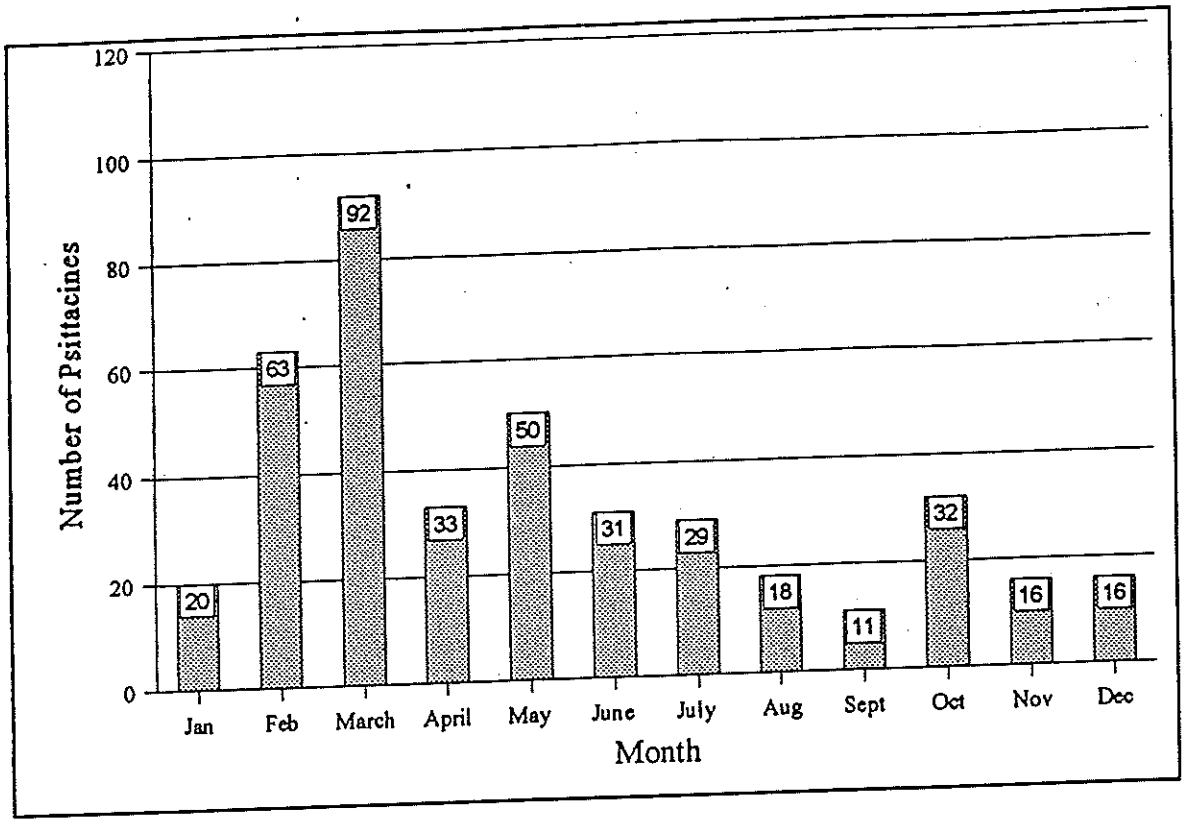
*There is an apparent error in the USFWS 1992 LEMIS data, which indicate that only 290 birds, including 201 psittacines, were confiscated in the entire United States. Those figures are lower than the number of birds reported as confiscated in that year along the Texas-Mexican border alone.

Figure 3 • Parrot Species Most Commonly Seized on Texas-Mexico Border, 1990-93



Sources: 1990-93 seizure records of USFWS, U.S. Customs Service, U.S. Border Patrol, and APHIS.

Figure 4 • Average Monthly Seizures of Parrots on the Texas - Mexico Border, 1990-93



Sources: 1990-93 seizure records of APHIS, USFWS, U.S. Customs Service and U.S. Border Patrol.

Seasonal Trends. Seizures took place year-round during the 4-year period covered by this study. The month in which the seizure took place was reported in some cases — totaling 1,636 confiscated psittacines. The average number of confiscations was highest in March, next highest in February and May, and lowest in September (Figure 4).

Seized Shipment Sizes and Smuggling Procedures. The most common number of birds in a confiscated shipment was 1 individual (309 of 468 shipments). Eighty-five percent of the shipments consisted of fewer than 6 birds. Shipments of more than 50 birds were rare, less than 2 percent of the total number of shipments seized. Only 9 shipments of over 50 birds were seized along the border in a 4-year period, an average of 2 shipments per year. Shipments of more than 50 birds accounted for 23 percent of all psittacines confiscated, while those fewer than 10 birds accounted for 47 percent of the specimens confiscated.

The circumstances of the seizure were described in 175 instances. The most commonly reported methods used to smuggle parrots were concealing the birds in automobiles (43 percent) and crossing the border on foot with the birds carried in small bags or boxes (42 percent). Eight percent of the incidents involved carrying birds on commercial airlines; 7 percent involved the smuggling of birds by swimming or wading across the Rio Grande river.

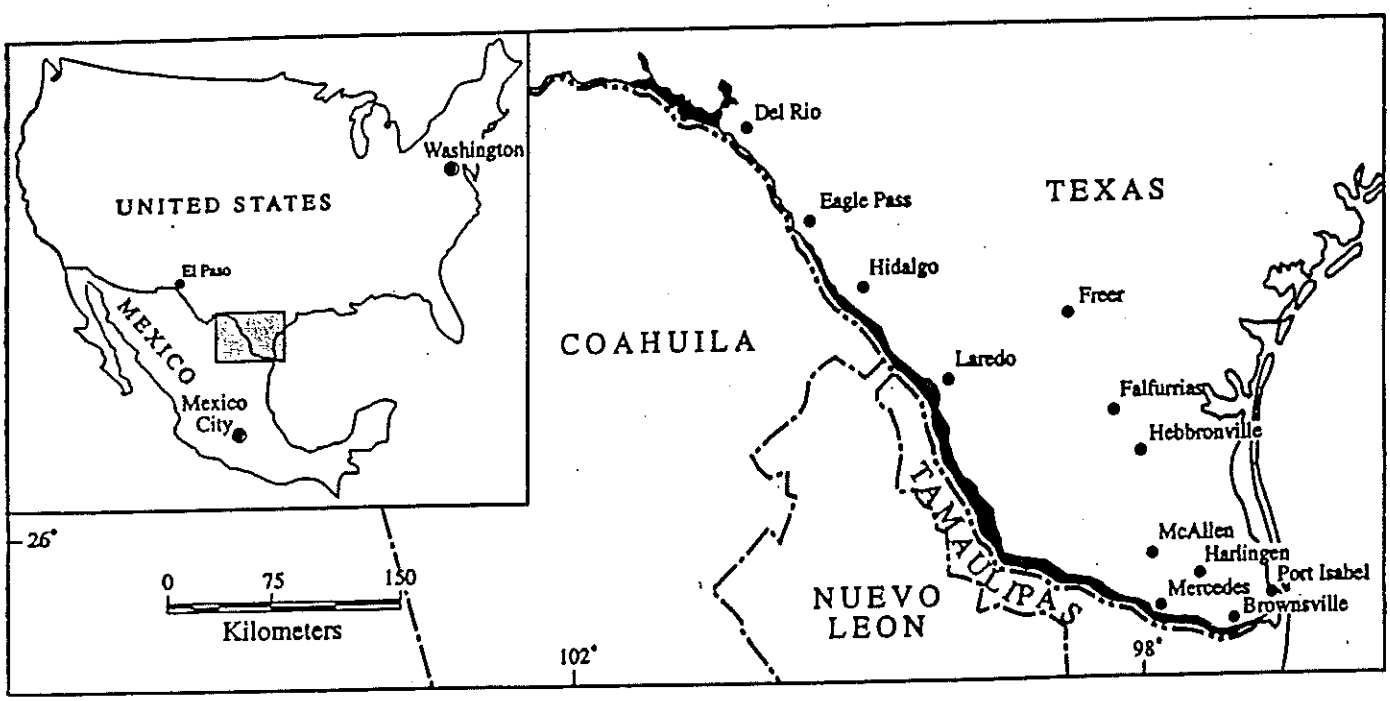
Location of Seizures. Location was reported for 250 seizures. Seizures were made in at least 13 towns of south Texas (Table 3), extending from Eagle Pass to the Gulf Coast (Figure 5). However, the seizures involving the largest numbers of psittacines were concentrated around Laredo, Brownsville, McAllen, and Harlingen (Table 3). No seizures were reported between Eagle Pass and El Paso.

Table 3. Reported Seizures, 1990--93

Site	Number Reported	Number of Birds Seized
Laredo	148	267
Brownsville	35	130
McAllen	18	94
Harlingen	13	172
Hidalgo	11	21
Houston	7	32
Mercedes	4	16
Eagle Pass	3	4
Freer	3	51
Progresso	3	5
Falfurrias	2	28
Hebbronville	2	3
Port Isabel	1	7
TOTAL	250	830

Source: Seizure records from U.S. Fish and Wildlife Service, U.S. Border Patrol, and U.S. Customs Service

Figure 5. Location of Seizure Sites, 1990--93



Source: Analia Pugener, Unpublished.

Discussion

Seasonality of Illegal Trade. The data reveal that the smuggling of psittacines across the Texas-Mexico border is a year-round activity. Although the number of birds confiscated for the same month in different years displayed a high degree of variability (Figure 4), a notable increase occurred in all years from February through May (except April). This increase coincides with the hatching seasons of most of the psittacine species involved (Forshaw and Cooper 1989).

Most of the psittacine trade across the U.S.-Mexican border involves pre-adult birds (Iñigo and Ramos 1991). Although seizure records do not report the age of the confiscated bird (i.e., whether a fledgling, juvenile, or adult), the high number of psittacines confiscated during the hatching season suggest that much of the trade across the Texas-Mexico border consists of pre-adult birds.

Smuggling Patterns. Most of the specimens involved in illegal trade entered the United States in shipments involving only a few birds. However, almost a fourth of the parrots were smuggled in shipments of more than 50 birds. These data support the conclusion that the illegal trade along the Texas-Mexico border consists of a mix of opportunistic and organized smuggling. Opportunistic smuggling is likely to involve the smuggling of a few parrots, for example in a bag, to be sold to anyone on the U.S. side of the border as an extra source of income. Organized smuggling, on the other hand, is likely to involve the use of professional carriers (mules) transporting from a few to dozens of birds to a contact awaiting them in the United States.

The clustering of seizures around the Laredo area suggests that south Texas could be the most important area for smuggling. However, this clustering could also reflect a concentration of law enforcement effort. During 1990—93, no wildlife inspectors were stationed between El Paso and Laredo, which left a large part of the western Texas border relatively uncontrolled, although this area was occasionally patrolled by USBP (GAO 1992) and the Drug Enforcement Agency (GAO 1993). Consequently, parrots could have been smuggled into western Texas, west of Eagle Pass, with a reduced probability of detection or reporting.

Possible Biological Effects. The impacts of cross-border smuggling on psittacine populations are likely to be magnified by the conditions of harvest and trade described above. First, the assumed predominance of juvenile birds in trade suggests an impact greater than that implied by sheer numbers, as juveniles are often harvested by cutting down or hacking apart the nesting tree (Eduardo Iñigo personal communication, 1996). Many adult birds do not breed successfully after their nesting tree is cut down, which exacerbates the negative impact (Sue Lieberman personal communication, USFWS, 1996). Second, Iñigo and Ramos (1991) estimated as many as 6 out of 10 illegally traded parrots might die during capture, captivity, and transport. Mortality rates are likely to be particularly high for wild-caught birds involved

in opportunistic cross-border smuggling due to the difficulties of providing proper care during transport, and also due to the methods of smuggling, including taping bills shut and hiding birds in small covered places.

The Potential Impacts of NAFTA and WBCA. The implementation of two recent U.S. legislative measures, the Wild Bird Conservation Act of 1992 and implementing legislation for the North American Free Trade Agreement of 1992, may exert a combined effect on parrot smuggling. WBCA is intended to restrict the importation of wild-caught birds and to encourage the breeding of wild species in captivity. The Act appears to have been successful in encouraging captive breeding in the United States given the following: (1) there is no evidence of a reduction in demand for parrots in the United States, (2) the supply of wild-caught parrot imports has been reduced to a trickle, and (3) the price of parrots on the U.S. market has not increased. However, because of the delay in issuing regulations to allow the importation of parrots from approved captive-breeding facilities in foreign countries, it seems likely that WBCA has not yet served to encourage the captive breeding in foreign countries. The provisions of the Act dealing with permits and legally approved sources are likely to be enforceable in airports, where falsified documents are a primary concern. However, along the porous Mexican border, where physical concealment of the parrots is the main problem and enforcement capabilities are weak, WBCA is likely to have little impact.

Upon enactment of WBCA, some law enforcement personnel and aviculturists expressed concern that the Act could result in an increase in smuggling activity. It was assumed that the value of psittacines and other restricted birds would increase as the WBCA ban reduced supply, thus increasing incentives to smuggle birds across the border and increasing smuggling activity. Two informal surveys by TRAFFIC suggest that these fears may be unfounded. In August 1996, TRAFFIC solicited bird prices from pet stores in California, Washington State, and Louisiana, compared them to price lists for the preceding five years, and detected no overall trend showing an increase in prices. These results should not, however, be considered conclusive without additional research into the U.S. domestic market. TRAFFIC also conducted an informal telephone survey in October 1995 to determine whether USFWS law enforcement personnel at the Mexican border had noticed an increase in smuggling since NAFTA and WBCA took effect. None of them reported having seen evidence of increased smuggling, but a few had moved from one Texas border post to another, hindering their ability to detect such a change, and others were relatively new to the region.

The implementation of NAFTA may simultaneously increase opportunities for smuggling wildlife across the border by promoting the opening of new border ports and increasing the flow of people and goods between the United States and Mexico (Rose 1991). Parrot smuggling routes currently tend to funnel into the eastern Texas (Laredo to Brownsville) or California, leaving the Arizona-New Mexico-western Texas region relatively inactive. The projected construction of additional bridges will multiply the volume of automobile and human traffic passing through western Texas and Arizona, creating additional routes for parrot smuggling into the United States. Since most smuggling incidents involve

fewer than six birds, this is off especial concern. Although USFWS opened a new office in Nogales, Arizona, and will open another in Del Rio, Texas, in October 1997, USFWS resources will continue to be spread thinly along the border. If the anticipated increase in smuggling materializes, the combined effects of NAFTA and WBCA may therefore have a negative impact on wild bird populations and multiply the need for law enforcement efforts. A future survey of the parrot trade at the Texas-Mexico border compared with the baseline date in this report will allow for an analysis of the impact of those two emergent factors on parrot smuggling at the border.

V. Conclusions

Parrot smuggling along the Texas-Mexico border remains an issue of serious conservation concern. Despite the lack of reliable data on the exact number of parrots smuggled across the US-Mexican border, ongoing bird seizures demonstrate that the southern border is a common and probably the most widely used route for illegal importation of parrots into the United States — including two species identified by IUCL N as vulnerable: the yellow-headed parrot and red-crowned parrot.

Several factors contribute to this situation. First, psittacines are extremely popular as pets in the United States, once the world's largest import market for parrots. Second, every level of the market chain offers incentives for trapping and smuggling parrots. Profit margins in the psittacine trade are very attractive, even for the trappers who benefit least from the trade. The US-Mexican border is extensive and difficult to monitor, and insufficient staff and low budgets have long limited the effectiveness of law enforcement on both sides of the border. Finally, the difficulty of enforcement is exacerbated by the large number of small shipments smuggled across the border. Long-term solutions to reduce incentives for smuggling include public education, increased captive-breeding capacity within the United States and Mexican avicultural industry, and the development of managed harvest and captive-breeding programs in supplier countries. In the short term, however, increased law enforcement may be the single most potent weapon to combat the smuggling of parrots across the U.S.-Mexican border.

In 1994, with funds appropriated under the North American Free Trade Agreement, USFWS began to increase its staffing levels on the Mexican border. The number of wildlife inspectors at Texas ports of entry increased from 9 in 1990—93 to 12 in mid-1995, and plans are underway to establish an office in Del Rio, Texas. These staff increases are an important step in limiting the impacts of NAFTA on wildlife trade between the United States and Mexico. Trade analysis and law enforcement investigations will therefore continue to be critical to understanding the levels, trends, organization, and conservation impacts of parrot smuggling across the U.S.-Mexico border and to identify the means needed to address it. If the incentives to smuggle remain strong — and there is every indication that they will — and enforcement capabilities along the border remain insufficient, not only will the illegal trade

increase (whether or not reflected by seizure records) but the targeted populations of psittacines will also decline.

VI. Recommendations

■ The USFWS should undertake an annual review of the parrot confiscation records analyzed in this report. Such reviews will serve several purposes. First, they will determine whether smuggling has increased since the passage of NAFTA and WBCA. If there is evidence of such an increase, mitigating measures will have to be identified and implemented. In addition, the reviews will reveal whether parrot smuggling continues to be elevated during certain months and at particular locations. If so, the United States and Mexico can increase law enforcement efforts during those months and in those areas, by temporarily assigning agents and inspectors from other areas.

■ The evidence of continuing illegal cross-border parrot trade highlights the need for greater vigilance by the USFWS and its counterparts in Mexico, and cooperation in investigating and prosecuting parrot smuggling cases. Despite the limited financial and human resources at the USFWS, this report demonstrates a clear need for additional personnel along the Texas-Mexican border. The authors believe that at least three additional agents, with sufficient operating funds, are needed. Further, strengthened intelligence gathering capabilities both in Region II and in the Washington D.C. office of law enforcement are needed to assist the border agents in uncovering large-scale parrot smuggling operations.

■ The USFWS – jointly with the U.S. Customs Service, the U.S. Border Patrol, APHIS, the Immigration and Naturalization Service – should establish a system whereby information on psittacine confiscations is routinely shared among the agencies, compiled, and centrally stored. Such sharing of information will improve intelligence gathering and facilitate an annual analysis of confiscation records recommended above.

■ The USFWS should launch an awareness campaign to educate the public about the illegal parrot trade from Mexico, and about the legal and environmental consequences of buying birds collected from the wild in Mexico. Likewise, the public should be informed of the advantages of owning captive-bred psittacines, rather than wild-caught parrots. The USFWS should systematically survey border officials to determine what kinds of information should be available to those crossing the border and through what means the information can most effectively reach its target audience. Once such a survey is done, the USFWS should make the appropriate information available and ensure that it is distributed to the target audience.

■ A full complement of implementing regulations is critical to effectively achieving the goals and objectives of the WBCA. The USFWS has now issued all but the last set of regulations – those that provide for the approval of foreign captive breeding facilities. It was the intent of the WBCA to encourage captive-breeding, and the continued delay in the issuance of these

regulations, which are undergoing a protracted agency review — is contrary to the intent of the Act.

■ The USFWS leadership should continue to support and should explore additional opportunities to cross-train Customs officials and Immigration and Naturalization Service officials stationed at the border, as they are the first line of defense in interdicting illegal wildlife trade. The cross-training that currently occurs is typically the result of initiatives taken by individual USFWS officials and agents of other federal agencies with a particular interest in wildlife trade. The USFWS should analyze the cases in which cross-training has been successful, and seek to replicate them elsewhere along the border.

■ In April 1996, the United States, Canada and Mexico signed the "Memorandum of Understanding Establishing the Canada/Mexico/United States Trilateral Committee for Wildlife and Ecosystem Conservation and Management," which seeks to enhance cooperation among the three nations on programs to conserve and manage wildlife of mutual interest, including scientific research, law enforcement, and sustainable use. Pursuant to this agreement, the USFWS should work closely with its counterpart agency in Mexico (Instituto de Ecología and Procuraduría Federal de Protección al Ambiente). In particular, USFWS should participate fully in cross-border training efforts, and should support field research on psittacine species most often encountered in trade and/or most threatened by trade, to help identify the species and circumstances under which wildlife can be collected and traded while maintaining healthy wild populations over the long term.

■ The WBCA establishes the Exotic Bird Conservation Fund and authorizes the Secretary of the Interior to use the fund to provide financial and technical assistance for projects designed to conserve exotic birds in their native countries. The Fund is to consist of penalties, fines, and forfeitures of property collected under the WBCA, donations, and appropriations. The authors recommend that the Administration include a request for appropriations for this fund in its budget submission to Congress, and that Congress appropriate the necessary resources. Congressionally appropriated funds, combined with any fines collected pursuant to the WBCA, should be used for biological studies of parrot species most often found in trade, for the development of conservation management programs, and for law enforcement.

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Appendix A. Distribution of Mexican Psittacines (And Conservation Status of Selected Species)

(1) *Aratinga holochlora* (Green parakeet)
"Open woodland, pine forest, humid forest, farmlands. Lowlands and mountains to 2200 m of Mexico in southwest Chihuahua, northeast Sinaloa and south Sonora; Revillagigedo Islands (Socorro); from south Nuevo Leon and Tamaulipas south to Guanajuato, Mexico, Puebla, Oaxaca, Veracruz and Chiapas; mountains, 900-2600 m, of north Central America in central and eastern Guatemala, El Salvador, Honduras, and north Nicaragua." (Sibley and Monroe 1990, 123) "Under Mace-Lande Criteria this species is regarded as Secure at Present." (WCMC, 1993, 89)

(2) *Aratinga strenua* (Pacific parakeet)
"Open woodland, pine forest, arid scrub, farmlands. Pacific slope of Central Middle America from Oaxaca and Chiapas south through north Central America to southwest Nicaragua." (Sibley and Monroe 1990, 124)

(3) *Aratinga brevipes* (Socorro parakeet)
"Occupies forest chiefly above 500 m on Socorro in the Revillagigedo Islands, Mexico, where in 1991 its population was estimated to be 400-500 birds; although numbers appear to be stable, the range may have contracted over the past 30 years and there may be some risk from erosion of habitat through sheep grazing, and the possibility of predation by cats. The Socorro Parakeet is distinguished from the Green Parakeet by its voice, morphology and plumage." IUCN Threat Status: VULNERABLE. (Collar, Crosby, and Struttersfield 1994, 106)

(4) *Aratinga nana* (Aztec parakeet, Olive-throated parakeet)
"Forest, scrub, second growth, farmlands, woodland. Lowlands and to 1100 m on Gulf-Caribbean slope of middle America from southern Tamaulipas, Veracruz and Yucatan pen. (including Holbox Island) south to extreme western Panama (western Bocas del Toro)." (Sibley and Monroe 1990, 124)

(5) *Aratinga canicularis* (Orange-fronted parakeet)
"Deciduous forest, edge, open woodland, arid scrub, swamps, towns. Lowlands to 1500 m on Pacific slope of Middle America from central Sinaloa and western Durango south to northwestern Costa Rica (to Gulf of Nicoya and San Jose region); Caribbean slope of Honduras (arid Comayagua v.)." (Sibley and Monroe 1990, 125)

(6) *Ara militaris* (Military macaw)
"Dry forest, open woodland, pine-oak forest, riverine woodland. Lowlands and mountains to 2500 m of Mexico from southeast Sonora, southwest Chihuahua, Sinaloa, Nayarit, Zacatecas, San Luis Potosi, southern Nuevo Leon and central Tamaulipas south to Mexico, Guerrero, Oaxaca and Chiapas: locally western South America in Colombia (including Dagúa, Cauca and Magdalena), northern Venezuela (northwest

Zulia, Distrito Federal), eastern Ecuador, northwest, northeast Peru (south to Lambayeque, Cajamarca and San Martin), eastern, southeastern Bolivia (Santa Cruz, Chuquisaca, Tarija) and northwestern Argentina (Salta, Jujuy)." IUCN Threat Status: THREATENED. (Sibley and Monroe 1990, 122)

(7) *Ara macao* (Scarlet macaw)
"Forest edge, open woodland, savanna, farmlands. Lowlands to 1100 m of Meotropical from Tamaulipas, Veracruz, Oaxaca, Tabasco, Chiapas and southern Campeche south (including Island of Coiba, off Costa Rica) to Panama, and from northern, eastern Colombia (west to lower and middle Magdalena v.), Venezuela (western, eastern Apure, northeastern Monagas, southwestern Sucre, central, southern Amazonas, northwestern, southcentral Bolivar) and Guianas south, east of Andes, through eastern Ecuador and eastern Peru to north, central Bolivia (Pando, Beni, Cochabamba, Santa Cruz) and Amazonian Brazil (from r. Negro and r. Jurua east to eastern Para and south to northern Mato Grosso)." (Sibley and Monroe 1990, 122)

(8) *Rhynchopsitta pachyrhyncha* (Thick-billed parrot)
"Pine-oak forest. Mountains, 1500-3400 m, of northwestern Mexico in Sierra Madre de Occidental (Chihuahua, Durango, probably elsewhere). Ranges north to southern Arizona (at least formerly) and south to central Mexico." IUCN Threat Status: ENDANGERED. (Sibley and Monroe 1990, 125)

(9) *Rhynchopsitta terrisi* (Maroon-fronted parrot)
"Pine-oak forest. 200-mile range in mountains, 1800, 3100 m of northern Mexico in Sierra Madre Oriental (in southeastern Coahuila, Nuevo Leon, and western Tamaulipas)." IUCN Threat Status: VULNERABLE.5, due to potential habitat loss, particularly forest degredation, but currently not subject to frequent trade and hunting. The total population of the species is currently estimated at 2,000 to 4,000. (WPTI 1996, 9-10)

(10) *Bolborhynchus lineola* (Barred parakeet)
"Humid forest, open woodland, savanna. Locally in highlands, 750-3000 m, of Middle America from Guerrero, Veracruz and Chiapas south through Guatemala, Honduras, Nicaragua and Costa Rica to western Panama (Chiriqui, Bocas del Toro and Veraguas); Andes, 1600-2600 m, of western South America in Colombia (all ranges south to Cauca and Huila), western Venezuela (Tachira, Merida), northern Ecuador and central Peru (Pasco, Cuzco). Ranges to lower elevations." (Sibley and Monroe 1990, 127)

(11) *Forpus cyanopygius* (Mexican parrotlet, Blue-rumped parrotlet)
"Thorn forest, open woodland, savanna, thorn scrub. Lowlands to 1320 m of western Mexico in southern Sonora, Sinaloa, western Durango, Zacatecas, Nayarit (including Tres Marias Island), Jalisco and Colima." (WPTI 1996, 9-10)

(12) *Brotogeris jugularis* (Orange-chinned parakeet)
"Open woodland, second growth, forest edge, arid scrub. Pacific lowlands (locally on

Caribbean slope) to 1400 m of Middle and northwestern South America in southwestern Mexico (Guerrero, southcentral Oaxaca, Chiapas), Guatemala, El Salvador, Honduras, Nicaragua and Costa Rica, Panama (both slopes, including Coiba and Taboga Islands), northern Colombia (south to Serrania de Baudo, upper Magdalena v., Norte de Santander and Arauca) and western Venezuela (east to Guarico and Apure)." (Sibley and Monroe 1990, 128)

(13) *Pionopsitta haemototis* (Brown-hooded parrot)
"Humid forest, edge, woodland. Lowlands and Mountains to 3100 m of Middle and northwestern South America from southern Mexico (Veracruz, Oaxaca, northern Chiapas, southern Campeche, Quintana Roo) south on Gulf-Caribbean slope of Central America to Nicaragua, both slopes of Costa Rica and Panama, and northwestern Colombia (south to r. Jurado and east to Bolivar)." (Sibley and Monroe 1990, 129)

(14) *Pionus senilis* (White-crowned parrot)
"Humid forest, edge, open woodland, savanna, farmlands. Lowlands to 1600 m of Middle America on Gulf-Caribbean slope from San Luis Potosi, southern Tamaulipas and Yucatan penisula. South through eastern, southern Mexico and Central America to Costa Rica (both slopes) and western Panama (western Chiriqui, western Bocas del Toro)." (Sibley and Monroe 1990, 130) "Under Mace-Lande Criteria this species is classified as Secure at Present." (WCMC 1993, 195)

(15) *Amazona albifrons* (White-fronted parrot)
"Deciduous forest, open woodland, second growth, scrub, savanna, farmlands. Lowlands of northern Middle America from southern Sonora, Sinaloa, western Durango, southeastern Veracruz and Yucatan penisula. South on Pacific slope of Middle America to northwestern Costa Rica (Guanacaste) and Gulf-Caribbean slope to Honduras." (Sibley and Monroe 1990, 131)

(16) *Amazona xantholora* (Yucatan parrot, Yellow-lored parrot)
"Deciduous forest, woodland, arid second growth. Lowlands of northcentral Middle America in southeastern Mexico (Yucatan penisula, including Cozumel Island), Belize and off northern Honduras (Island Roatan in Bay Islands)." (WCMC 1993, 195)

(17) *Amazona viridigenalis* (Red-crowned parrot, or Green-cheeked amazon)
"Forest, woodland, farmlands. Lowlands of northeastern Mexico in Nuevo Leon, Tamaulipas, San Luis Potosi, and extreme northeastern Veracruz. Introduced into Hawaiian Islands (Oahu), southern California, southern Florida, Puerto Rico." IUCN Threat Status: ENDANGERED. (WCMC 1993, 125)

(18) *Amazona finschi* (Lilac-crowned parrot)
"Deciduous forest, pine-oak woodland, second growth, farmlands. Lowlands of Pacific slope of western Mexico from southeastern Sonora and southwestern Chihuahua south to Oaxaca (to Isthmus of Tehuantepec)." (WCMC 1993, 125) "Under Mace-Lande Criteria this species is thought to be Vulnerable, being threatened by trade and possibly habitat loss." (WCMC 1993, 93)

(19) *Amazona autumnalis* (Red-lored parrot, Yellow-cheeked parrot)
"Forest, mangroves, second growth, woodland, pine savanna, farmlands. Lowlands to 1100 m of northern Middle America on Gulf-Caribbean slope from San Luis Potosi and Tamaulipas (absent from Yucatan penisula), south to Honduras (including Bay Islands); southern Central and northwestern South America in eastern Nicaragua, both slopes of Costa Rica (rare northwestern) and Panama (including Coiba and Pearl Islands), and to 1000 m in western, northern Colombia (Pacific slope east to Magdalena v. in Atlantico and Antioquia), western Ecuador (south to Gulf of Guayaquil) and northwestern Venezuela (Sierra de Perija in northwestern Zulia)." (WCMC 1993, 195)

(20) *Amazona farinosa* (Mealy parrot)
"Humid forest, riverine forest. Lowlands to 1100 m of Neotropical on Gulf-Caribbean slope from southern Veracruz, southern Campeche and northern Oaxaca (absent from the Yucatan penisula) south to Nicaragua, both slopes of Costa Rica and Panama (including Island Coiba and small islands), and from Colombia (except northern coast and Santa Marta region) and western, southern Venezuela (Zulia, Tachira, Barinas, northern, central Amazonas, northern Bolivar) south, west of Andes to western Ecuador and east of Andes to eastern Ecuador, eastern Peru, northern, eastern Bolivia and Amazonian, eastern Brazil (south to Rondonia, southern Amazonas, northern Mato Grosso and Para; Bahia, Espirito Santo, Minas Gerais, Sao Paulo)." (Sibley and Monroe 1990, 132)

(21) *Amazona oratrix* (Yellow-headed parrot)
"Deciduous forest, open woodland, pine ridges. Pacific slope of northern Middle America from Colima (including Tres Marias Islands) south to Oaxaca (Isthmus of Tehuantepec); Gulf-Caribbean slope of Mexico from southern Nuevo Leon and Tamaulipas south to Veracruz and Tabasco; Belize, extreme northwestern Honduras." IUCN Threat Status: ENDANGERED. (WCMC 1993, 93)

(22) *Amazona auropalliata* (Yellow-naped parrot)
"Deciduous forest, thorn scrub, open woodland, pine savanna, farmlands. Pacific slope of central Middle America from extreme eastern Oaxaca south to northwestern Costa Rica (Guanacaste), northern Honduras (Sula v., where possibly introduced; Bay Islands of Roatan, Barbareta and Guanaja); pine savanna of Mosquitia (eastern Honduras, northeastern Nicaragua)." (WCMC 1993, 93) "Under Mace-Lande Criteria this species is considered Secure at Present, with possible threats from trade and habitat loss. (WCMC 1993, 195)