



*American Public Gardens Association
June 19th, 2019*

International Collaborations for Tree Conservation: Opportunities and Examples

Silvia Alvarez Clare & Murphy Westwood



Mission:

Prevent tree extinction through global collaborations

1. Identify and prioritize threatened species
2. Catalyze the global network of experts
3. Build conservation capacity
4. Strengthen the conservation value of living collections (*ex situ*)
5. Protect threatened trees in the wild (*in situ*)

Networking Opportunity: ArbNet



Select Language ▾

Search

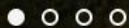
ACCREDITATION | MORTON REGISTER | RESOURCES | NEWS AND EVENTS | DISCUSSION FORUM | ABOUT ARBNET



Welcome to ArbNet

ArbNet is an online, interactive community of arboreta that supports the common purposes and interests of tree-focused public gardens.

LEARN MORE



Welcome to ArbNet, an interactive, collaborative, international community of arboreta and tree-focused professionals. ArbNet facilitates the sharing of knowledge, experience, and other resources to help arboreta meet their institutional goals and works to raise professional standards through the ArbNet Arboretum Accreditation Program.

SUBSCRIBE to the Quarterly Newsletter.

A GLOBAL NETWORK FOR TREE-FOCUSED PROFESSIONALS!

ArbNet
 Morton Arboretum, Lisle, IL
 www.arbnet.org • arbnet@mortonarb.org • 1-800-310-7013

ARBORETUM ACCREDITATION: STRENGTHENING THE ARBORETUM COMMUNITY

Be recognized and lead the way

- The ArbNet Arboretum Accreditation Program is designed to:
 - Recognize standards of excellence in tree-focused gardens
 - Foster professionalism of arboreta worldwide
 - Enable conservation, collections, and scientific collaborations
 - Advance the planting, study, and conservation of trees

Accreditation Program Benefits

- Be recognized for achievement of specific levels of professional practice
- Work toward higher levels of accreditation
- Provides benchmarks and models for further achievement
- Earn distinction in your professional and local communities
- Earn leadership and influence by serving as a model arboretum
- Identify opportunities for collaboration with other arboreta

Four Levels of Accreditation

	Level 1	Level 2	Level 3	Level 4
Professional Practice	✓	✓	✓	✓
Public Access	✓	✓	✓	✓
Conservation	✓	✓	✓	✓
Education	✓	✓	✓	✓
Research	✓	✓	✓	✓
Plant Collections	✓	✓	✓	✓
Public Programs	✓	✓	✓	✓
Financial Management	✓	✓	✓	✓
Human Resources	✓	✓	✓	✓
Facilities	✓	✓	✓	✓
Public Safety	✓	✓	✓	✓
Public Relations	✓	✓	✓	✓
Public Programs	✓	✓	✓	✓
Public Safety	✓	✓	✓	✓
Public Relations	✓	✓	✓	✓



An international network of tree-focused professionals

- In addition to accreditation, ArbNet offers:
 - A website with helpful, open-access resources
 - Online training, education, and social media channels
 - Arboretum-focused news and events
 - The Morton Register of Arboreta
 - Access to a diverse global network of colleagues for collaboration and information exchange

RESOURCES



ArbNet Funding and Collaboration Opportunities

- ArbNet Capacity Building Grant
 - Recognizing arboreta by awarding in 2016
 - Six arboreta received a total \$5,000 in funding
 - Supported projects included:
 - Arboretum Management
 - Educational programming
 - Tree collection
 - Tree service and conservation

BGI/ArbNet Partnership Programs

- International partnership building website
- Facilitates sharing of knowledge, skills and resources within the arboretum garden and arboretum community
- Planting gardens based on mutual interests in new forests in arboreta (past or present)
- Annual training concerning emergency preparedness
- \$15,000 awarded to partners in 2017



Presented at BGI's Eurogard VIII in Lisbon, Portugal

Learn More →

WHAT IS AN ARBORETUM

Networking Opportunity: ArbNet



MORTON REGISTER OF ARBORETA

BROWSE BY COUNTRY | BROWSE BY U.S. STATE | ACCREDITED ARBORETA | ALPHABETICAL LIST

View the Morton Register of Arboreta

The Morton Register of Arboreta is a comprehensive list and database of arboreta and public gardens that have a substantial focus on woody plants. The Morton Register is one of the services provided by ArbNet to strengthen the ArbNet Community. The purpose of the Morton Register is to identify all of the organizations in the world that collect and display trees, shrubs, and other woody plants for the benefit of the public, science, and conservation. The Morton Register is a constantly growing database and any identified or named arboretum, or public garden with a significant focus on woody plants, may be listed. Contact the ArbNet Coordinator if your institution should be added to the Morton Register.

The Morton Register of Arboreta should not be confused with arboreta that have been accredited through the ArbNet Arboretum Accreditation Program. ArbNet-accredited arboreta are highlighted in the Morton Register with the official ArbNet accreditation badge and a link to their dedicated profile web page. Organizations listed in the Morton Register are strongly encouraged to become accredited through the [ArbNet Accreditation Program](#).

View the list of [ArbNet Accredited Arboreta](#) within the Morton Register.

Select Language ▾

Search

ACCREDITED ARBORETA

LEVEL I ACCREDITED ARBORETA

LEVEL II ACCREDITED ARBORETA

LEVEL III ACCREDITED ARBORETA

LEVEL IV ACCREDITED ARBORETA

VIEW ALL ACCREDITED ARBORETA

RECENT NEWS

52-million-year-old oak fossils found in Patagonia may contradict the genera's evolutionary origin

New study finds that almost 600 plant species have been lost from the wild in the last 250 years.

[LEARN MORE →](#)

Map of Accredited Arboreta

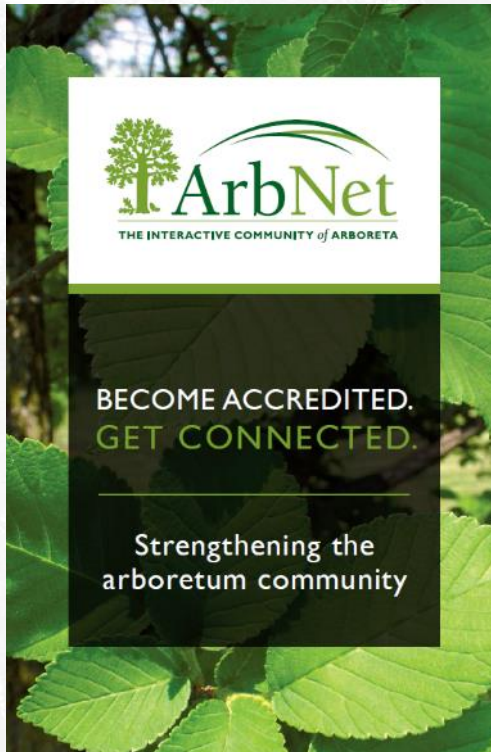


1500 arboreta in
90 countries in
the Morton Register

309 ArbNet
Accredited Arboreta
in **21** countries

Networking Opportunity: ArbNet

ArbNet Arboretum Accreditation Program



	LEVEL I	LEVEL II	LEVEL III	LEVEL IV
Arboretum plan	■	■	■	■
Organizational or governance group	■	■	■	■
Labeled trees/woody plant species				
25+	■			
100+		■		
500+			■	■
Staff or volunteer support				
Volunteer or paid	■			
Paid management		■	■	■
Curator			■	■
Scientific or conservation staff				■
Public dimension				
Public access & at least one event per year	■	■	■	■
Enhanced public & educational programs		■	■	■
Substantial education				
Participation in ArbNet				■
Collections conservation				■
Collections policy				
Collaboration with ArbNet				■
Collections data sharing with networked collections			■	■
Agenda for tree science, planting, & conservation			■	■
Collections conservation				■
Conservation role in Global Trees Campaign				■



Collections conservation

Conservation role in Global Trees Campaign

HOME > MORTON REGISTER > THE MORTON REGISTER OF ARBORETA

The Morton Register of Arboreta

BROWSE BY COUNTRY | BROWSE BY U.S. STATE | ACCREDITED ARBORETA | ALPHABETICAL LIST

| [A](#) | [B](#) | [C](#) | [D](#) | [E](#) | [F](#) | [G](#) | [H](#) | [I](#) | [J](#) | [K](#) | [L](#) | [M](#) | [N](#) | [O](#) | [P](#) | [Q](#) | [R](#) | [S](#) | [T](#) | [U](#) | [V](#) | [W](#) | [X](#) | [Y](#) | [Z](#)

K.C. IRVING ENVIRONMENTAL SCIENCE CENTRE

Harriet Irving Botanical Gardens, Wolfville, Nova Scotia, B4P 2R6, Canada

<http://kcirvingcentre.acadiau.ca/main.html>

KADOORIE FARMS & BOTANIC GARDEN

Lam Kam Road, Tai Po, Hong Kong S.A.R., China

Phone: +852-2483-7134

Email: gfischer@kfbg.org

<http://www.kfbg.org/eng>

**ACCREDITED
ARBORETUM**
— Level IV —



Learn More →

KALGOORLIE INLAND FOREST ARBORETUM

P.O. Box 10176430, Kalgoorlie, Australia

http://www.dec.wa.gov.au/component/option,com_hotproperty/task,view/id,26/Itemid...

KALMBACH MEMORIAL PARK

200 Cotton Street, Macungie, Pennsylvania, United States

<http://kalmbachpark.com>

KALOPA STATE PARK ARBORETUM

44-3480 Kalanialai Rd, Honokaa, Hawaii, 96727, United States

<http://hawaiiistateparks.org>

KANSAS FOREST SERVICE DEMONSTRATION ARBORETUM AND HONOR GROVE

2610 Claflin Road, Manhattan, Kansas, 66502, United States

Phone: 785-532-3315

Email: kbomborg@ksu.edu

<http://www.kansasforests.org>

**ACCREDITED
ARBORETUM**
— Level II —



Learn More →

ACCREDITED ARBORETA

LEVEL I ACCREDITED ARBORETA

LEVEL II ACCREDITED ARBORETA

LEVEL III ACCREDITED ARBORETA

LEVEL IV ACCREDITED ARBORETA

VIEW ALL ACCREDITED ARBORETA

ACCREDITATION CRITERIA

APPLY FOR ACCREDITATION

LEVEL I CRITERIA

LEVEL II CRITERIA

LEVEL III CRITERIA

LEVEL IV CRITERIA

LEVELS OF ACCREDITATION

ACCREDITED ARBORETA

Networking Opportunity: ArbNet

Advancing ArbNet conservation programming and resources

- Three-year grant funded initiative
- Supports ArbNet Conservation Assistant
- Facilitate conservation collaborations
- Support accreditation and capacity building
- Identify potential projects and funding streams
- Focus support on biodiversity hotspots and developing countries



Building Conservation Capacity

Previously: Capacity Building Grants



Vallarta Botanical Garden:

Botanical survey of newly
acquired natural areas



Belton Memorial Park Arboretum:

New interpretation and
information kiosk

Building Conservation Capacity

Now: BGCI/ArbNet Partnership Programme



The Tasmanian Arboretum (Australia)
&
Vilnius University Botanic Garden (Lithuania)

Project: Developing collaborative social media videos to promote plant conservation

Building Conservation Capacity



[Our Work](#)

[Membership](#)

[News & Events](#)

[Resources](#)

[About](#)

[Support BGCI](#)

[BECOME A MEMBER](#)

BGCI/ArbNet Partnership Programme funding opportunity:

- Up to \$2,500 per project
- Focus on tree conservation
- Involve an international partnership between two institutions
- At least one of the two partners is ArbNet accredited
- Prioritize capacity building in biodiversity hotspots and developing countries

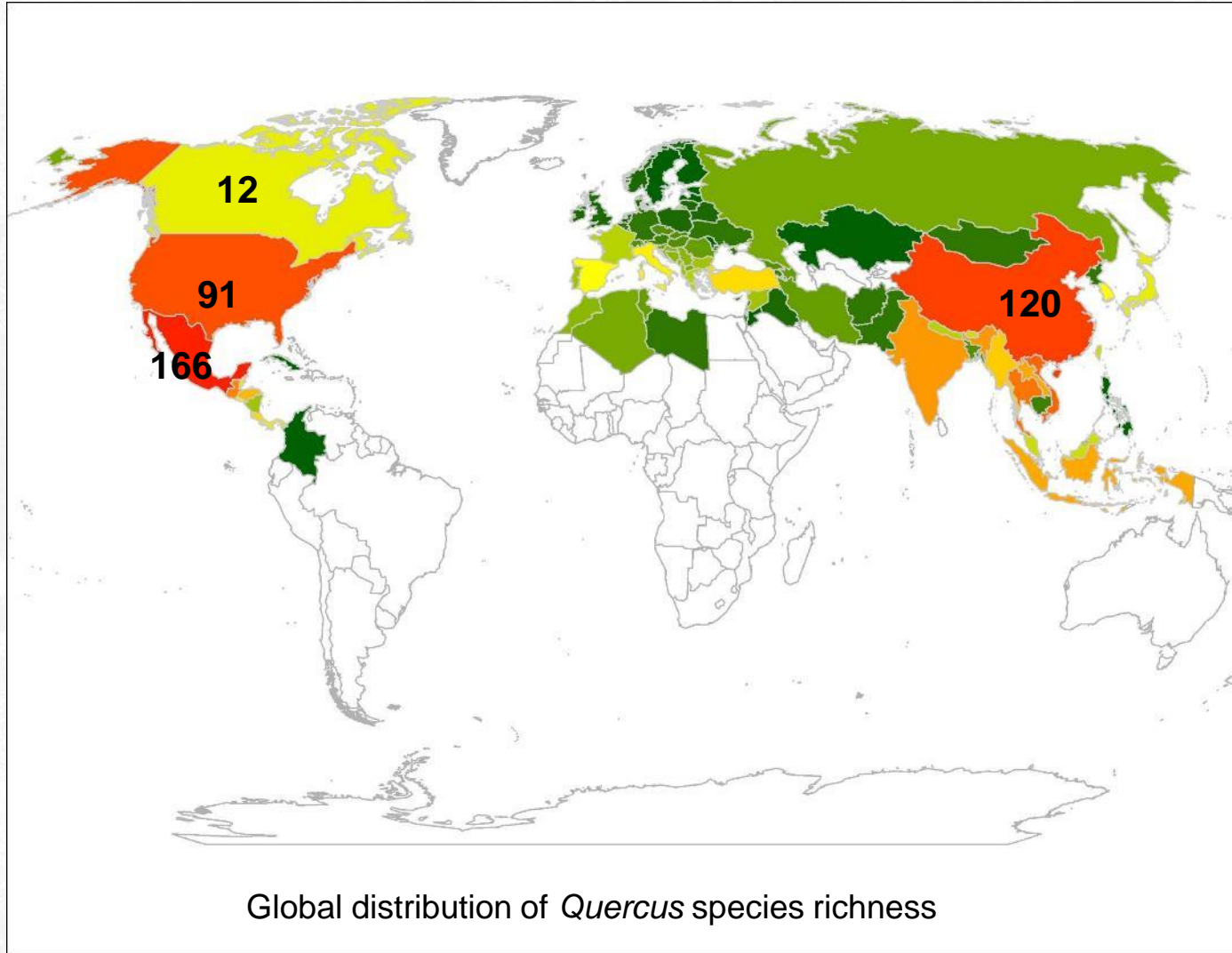
Global Botanic Garden Fund

The Global Botanic Garden Fund is a new fund aimed at driving plant conservation in botanic gardens. Grants through the fund are only available to BGCI members.

Taxonomic focus: Oaks



Oak Diversity Hotspots



Global distribution of *Quercus* species richness

Build Networks: OACN

Oaks of the Americas Conservation Network



Global Conservation Consortia



Global Conservation Consortia aim to:

- Identify and prioritize species of greatest conservation concern
- Conduct research
- Conserve species *in situ*
- Establish and manage coordinated *ex situ* collections of high conservation value
- Build capacity to empower and mobilize in-country partners in diversity hotspots
- Increase public awareness and engagement

NEW!

Learn more! Thursday, 9:30-11:00 AM, Palladian Ballroom

Global Conservation Collaborations: Latin American Oaks



THE LAWRENCE FOUNDATION



Global Conservation Collaborations: Latin American Oaks

Field survey and threat assessment of rare Mexican oaks

- >10 field collecting trips throughout state of Puebla
- 200 herbarium specimens
- Dozens of seedlings for the Quercetum
- Mexican oak taxonomy and Red List workshop
- Mexican oak propagation manual being developed
- Completed Red List assessments for all Mexican oak species



Rare oak seedlings at BUAP Quercetum



Allen Coombes and Etelvina Gandara collecting in Puebla State

Global Conservation Collaborations: Latin American Oaks

Integrated conservation of endangered *Quercus brandegeei*



Global Conservation Collaborations: Latin American Oaks

Integrated conservation of endangered *Quercus brandegeei*

- Investigate regeneration failure
- Collect and distribute acorns to Mexican gardens
- Conduct germination experiments
- Propagate and reintroduce seedlings
- Inform future conservation actions



Global Conservation Collaborations: Latin American Oaks

Integrated conservation of endangered *Quercus brandegeei*



- Collected >4,000 acorns over 2 years
- *Ex situ* collections: 3 → 12 gardens
- Germination studies underway
- Drought experiments underway
- 680 seedlings ready for transplant
- Grazing exclosures being built
- Greenhouses built
- Interviews w/local farmers, now partners
- Co-supervising local M.S. student
- Planning community training workshop
- Leveraged several successful grants

The most important outcome: Our partnerships!

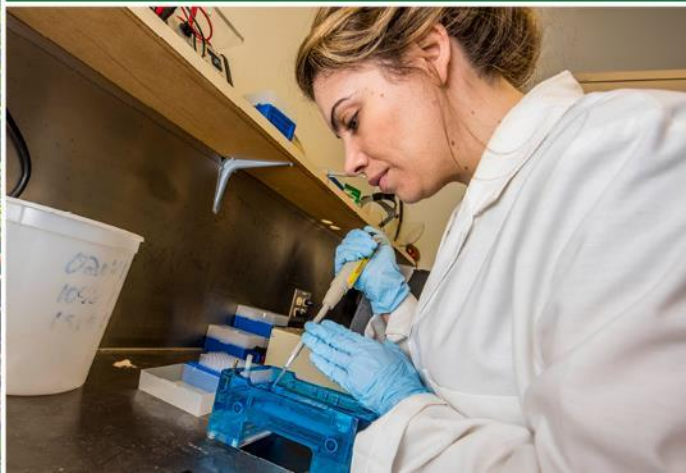




The Morton
Arboretum



THE
CHAMPION
of TREES



4. Development of a sustainable management plan for *Quercus insignis*

The Problem:

- Cloud forest canopy species ranging from Mexico to Panama but populations small, fragmented
- Declining due to intense deforestation pressure
- Some taxonomic issues in Central America (*Q. Oocarpa*)

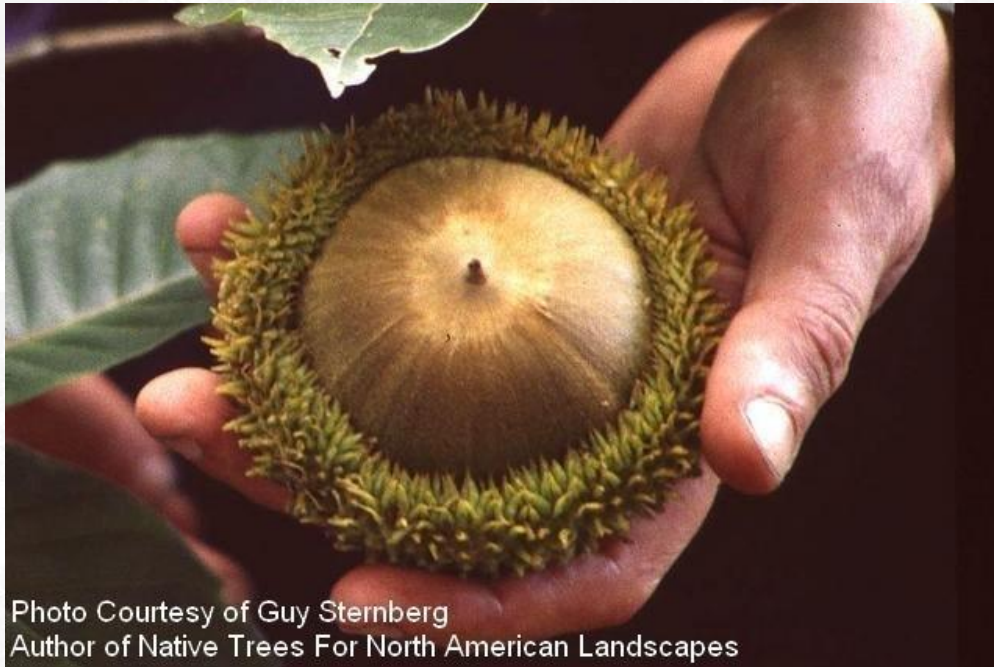


Photo Courtesy of Guy Sternberg
Author of Native Trees For North American Landscapes



4. Development of a sustainable management plan for *Quercus insignis*

Goals:

- Conduct population surveys, collect seed, and reinforce wild populations
- Molecular and morphological research to understand and refine species boundaries

Partners:

- Universidad Nacional Autónoma de México (UNAM)
- Institute of Ecology (INECOL)
- Las Cañadas Cooperative (Xalapa)



Development of a sustainable management plan for *Quercus insignis*

Activities & Achievements:

- Stakeholder meeting on conservation of *Q. insignis* in cloud forest habitat
- Zamorano University, Honduras (October 2017)
- 16 researchers from 10 institutions in 5 countries attended
- Establishment of expertise network



Zamorano's Mt. Uyuca Biological Reserve

Development of a sustainable management plan for *Quercus insignis*

Dr. Tarin Toledo-Aceves:

- 300 seedlings of *Q. insignis* and 300 of four other cloud forest tree species planted in Xalapa, Mexico.
- 200 more for next year.
- Restoration experiment at Las Cañadas Coop.



Secondary Tropical Cloud Forests:
Assessing Their Potential For
Multiple Use Management

**NATIONAL
GEOGRAPHIC**



Development of a sustainable management plan for *Quercus insignis*

Dr. Hernando Rodriguez-Correa:

- Collecting *Q. insignis* material across Mexico
- Genetic material will be used for biogeographic analysis and to inform in situ conservation efforts
- Sharing acorns with Tarin to reinforce populations
- *Ex situ* conservation

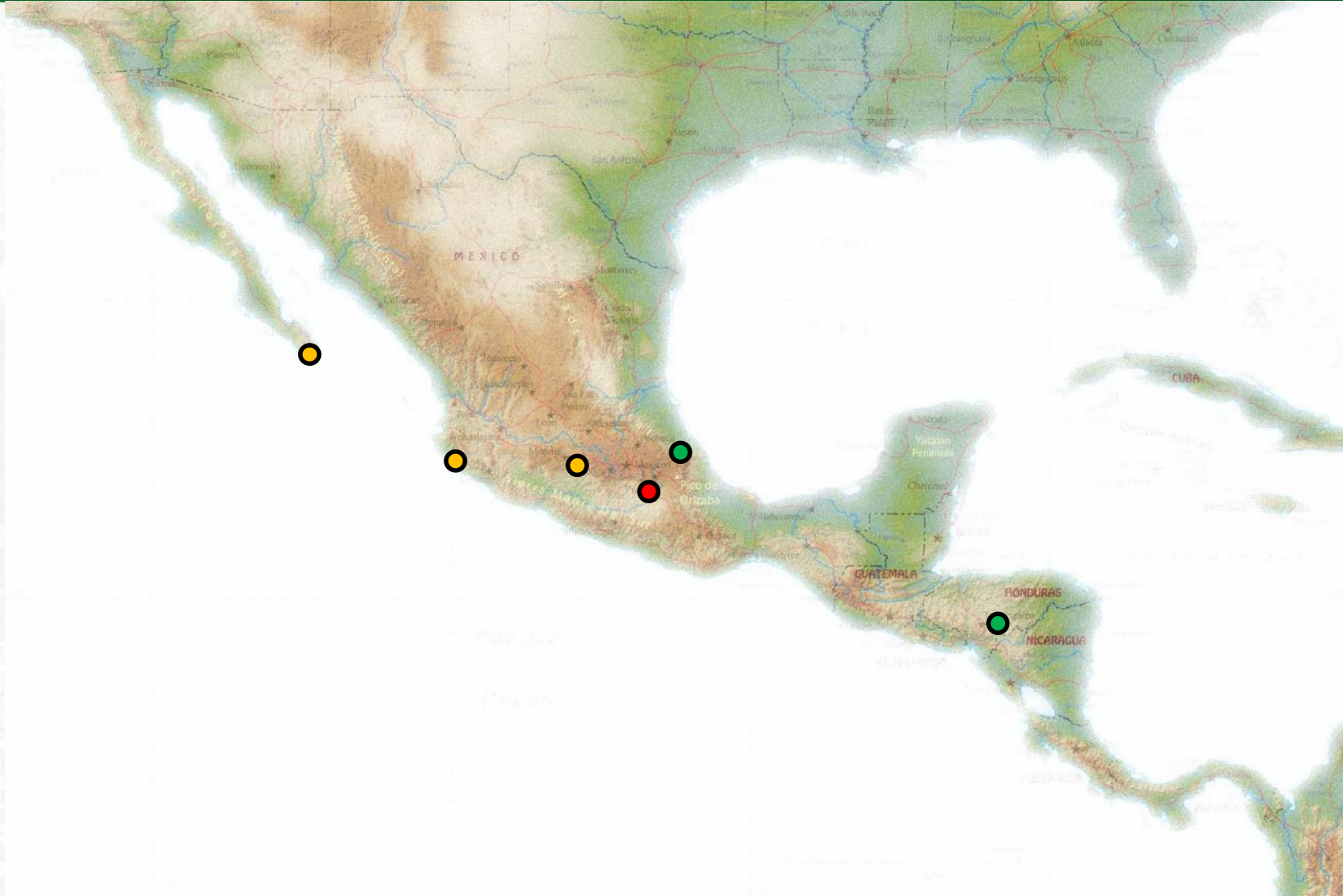


Hernando Rodríguez Correa

Integrated Research and Conservation of Endangered Quercus insignis Martens & Galeotti, 1843 (Fagaceae)



Thank you & GRACIAS!





Trees are under threat globally



60,000 tree species
>17% threatened with extinction
>1,900 tree species *critically endangered*