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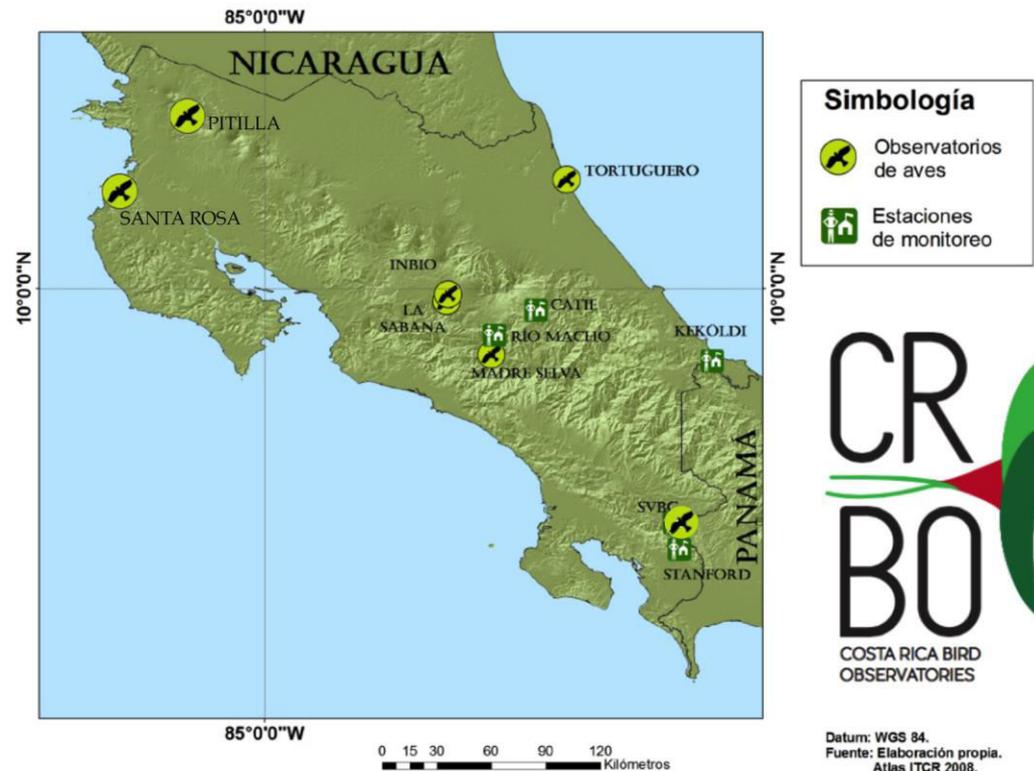
# Conservation of declining species through bird observatories, experiences from the highlands of Costa Rica

Pablo Elizondo



# About CRBO

- A non profit organization.
- Saving and studying birds since 1994.
- 18 sites at 6 field stations.
- Longest running effort in Central America.





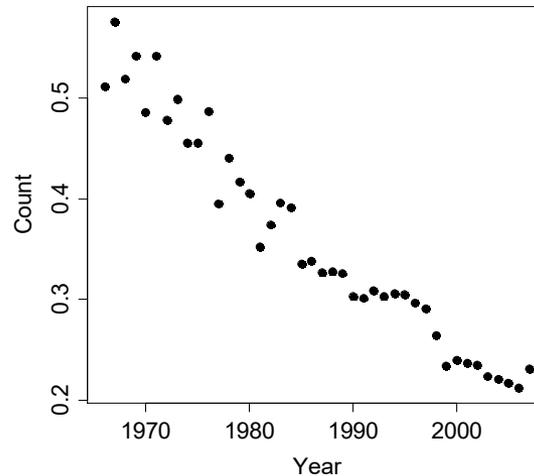
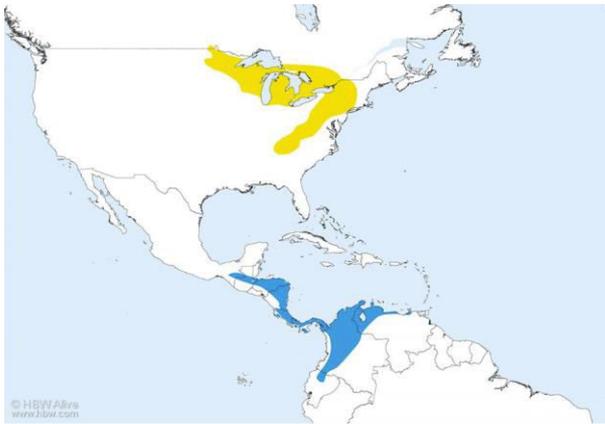
# Main activities

- **Science** program (banding, census, biological sampling etc.)
- **Educational** and outreach program.
- **Conservation** implementation.
- Through science we answer the questions relevant to the conservation of birds, with education we create sensible citizens that respond to the conservation actions.

# Golden-winged Warbler project overview

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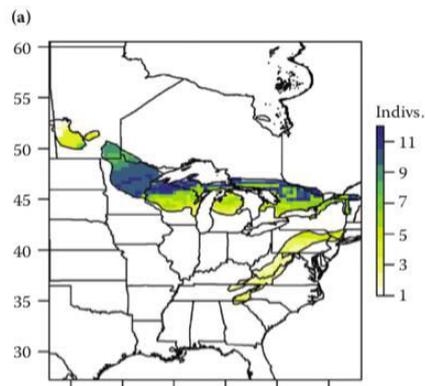
- Nearctic-neotropical migrant.
- Status and distribution = not ideal.
- Conservation gap analysis and solutions.



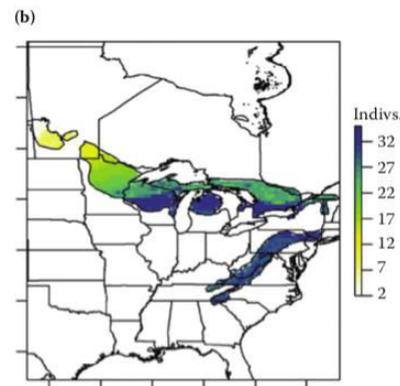
# Migratory connectivity

- Stable isotopes (Studies in Avian Biology)

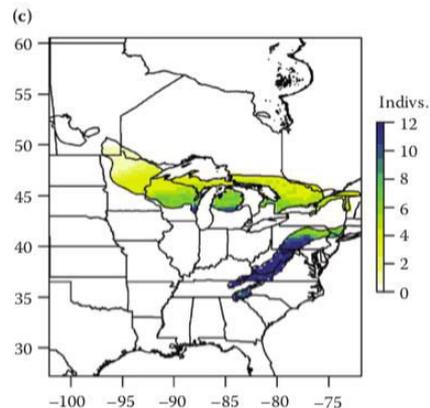
Nicaragua



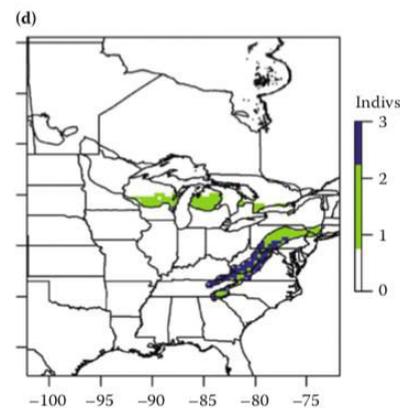
Costa Rica



Colombia

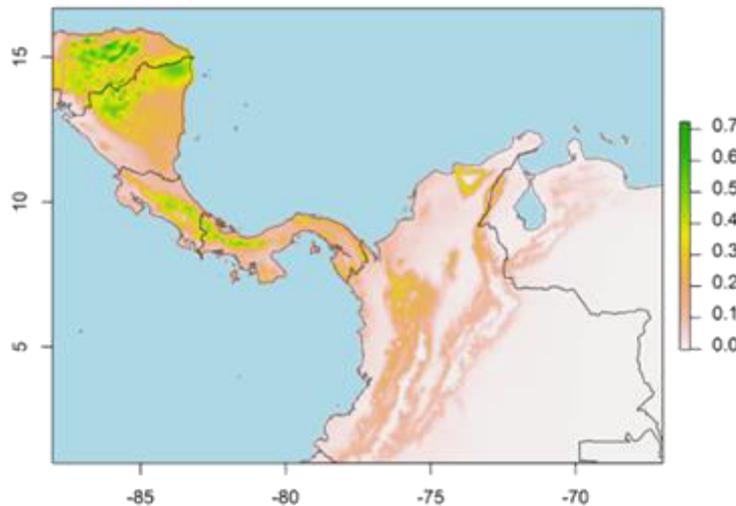


Venezuela



# Habitat needs

- Occupancy models.
- Habitat assessment.
- Conservation gap analysis.



## FOCAL AREAS GOLDEN WINGED WARBLER



# Conservation measures

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- Habitat protection is cost prohibited through land purchase.
- Ecosystem payment services as an option to forego development.
- Conservation of a diversity of resources.
- **PES, Restoration and education program.**

# Ecosystem Payment Services

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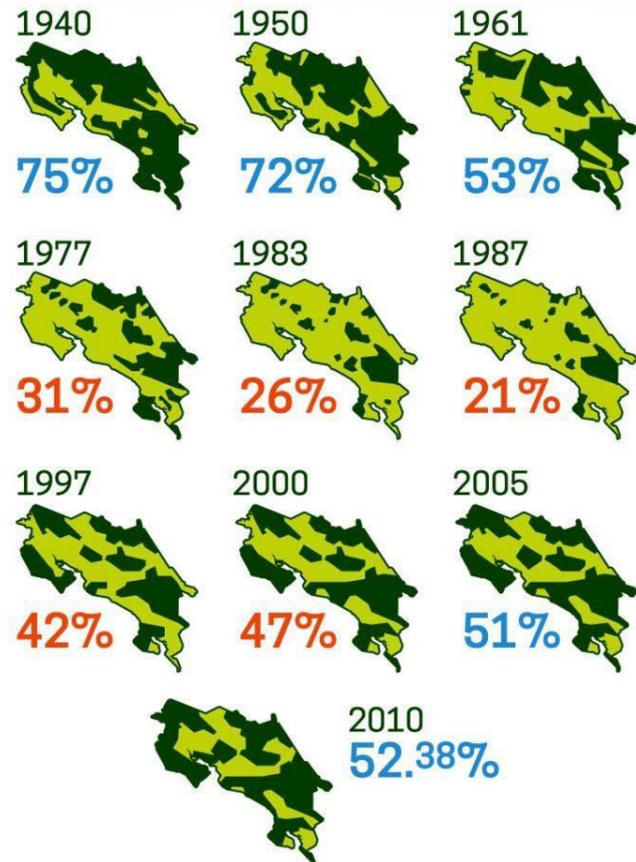
- Establishment of a value for the service based on market rules.
- Client – provider relationship.



# Ecosystem Payment Services in Costa Rica

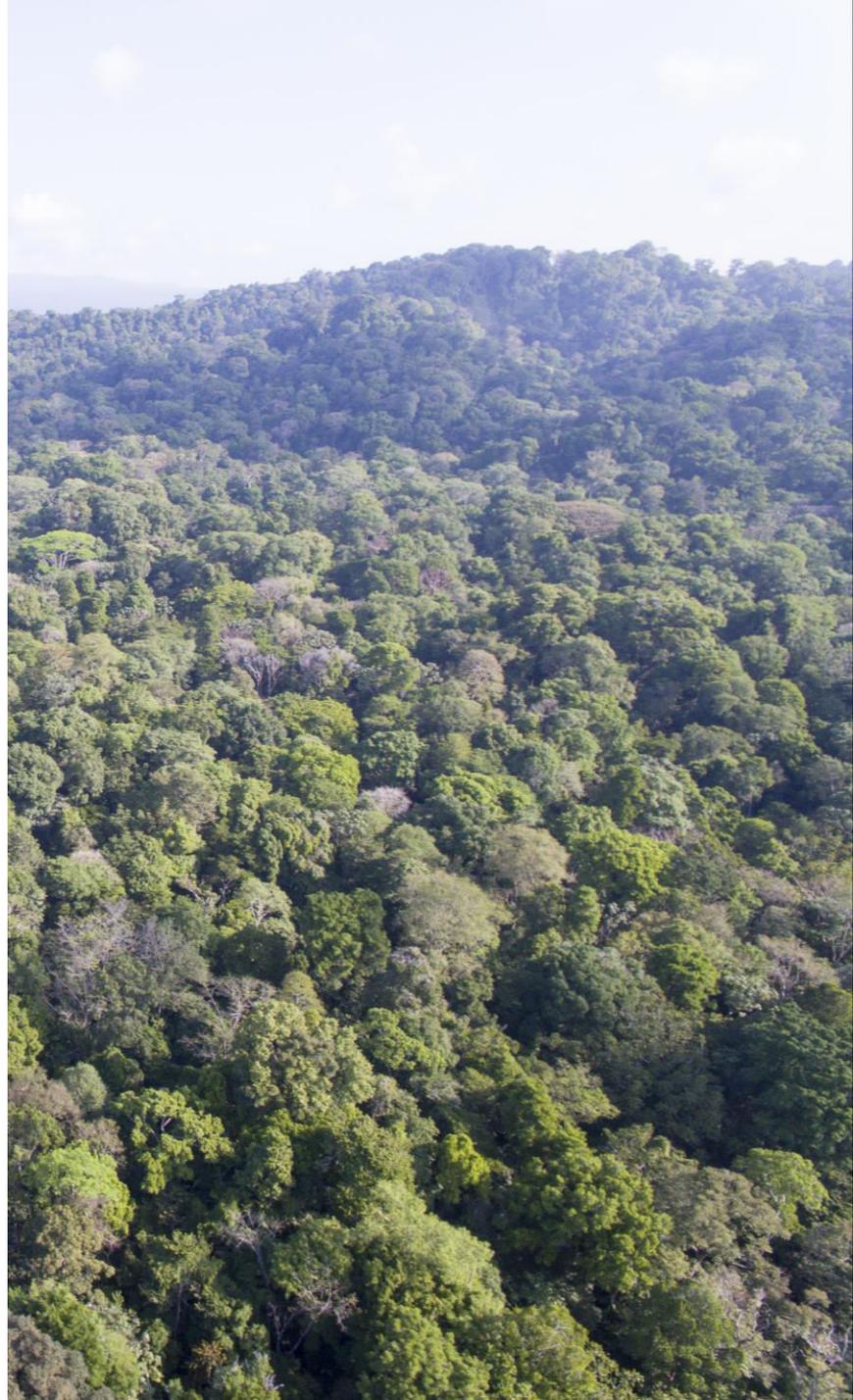
- 56% by 2018
- Proven to work in CR
- Lead to recovery of forest and reversal of deforestation.
- Based on carbon and water services.
- Biodiversity is just emerging

**Forest Cover Costa Rica Map**



# Bird based ecosystem payment services program

- Implemented on areas of high occupancy of GWWA.
- Outside of protected areas.
- Larger or highly connected areas.
- Complemented with government payments.



# Habitat restoration

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- Areas within the core occupancy.
- Native species.
- In collaboration with several entities.
- Community endorsed.



# Community outreach

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- Education program.
- Political lobby.
- Media outreach.

# Results up to date

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- Species understanding (science).
- Habitat conservation (existing forest).
- Habitat increase (restoration).
- Habitat awareness (education).



# Results

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- 2000 Hectares under conservation.
- Birds detected in 85% of easements.
- Distribution of 20.000 native trees.
- Estimated 0.80% population recovery.
- 1200 kids enrolled from 40 schools.



# Graduation of the Bird Detectives Program

# Challenges ahead

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- Financial sustainability.
- Performance information.
- Expansion into other regions.

# Conclusions

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- Bird observatories are an excellent platform for data collection.
- Scientific validity and reputation.
- Trusted local organizations.
- Practical and flexible organizations.



# Thanks to

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- IBOC organizers..
- US Fish and Wildlife Service.
- US Forest Service.
- CJ Ralph.



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