

Fire and Climate Change

In the Maya Biosphere Reserve

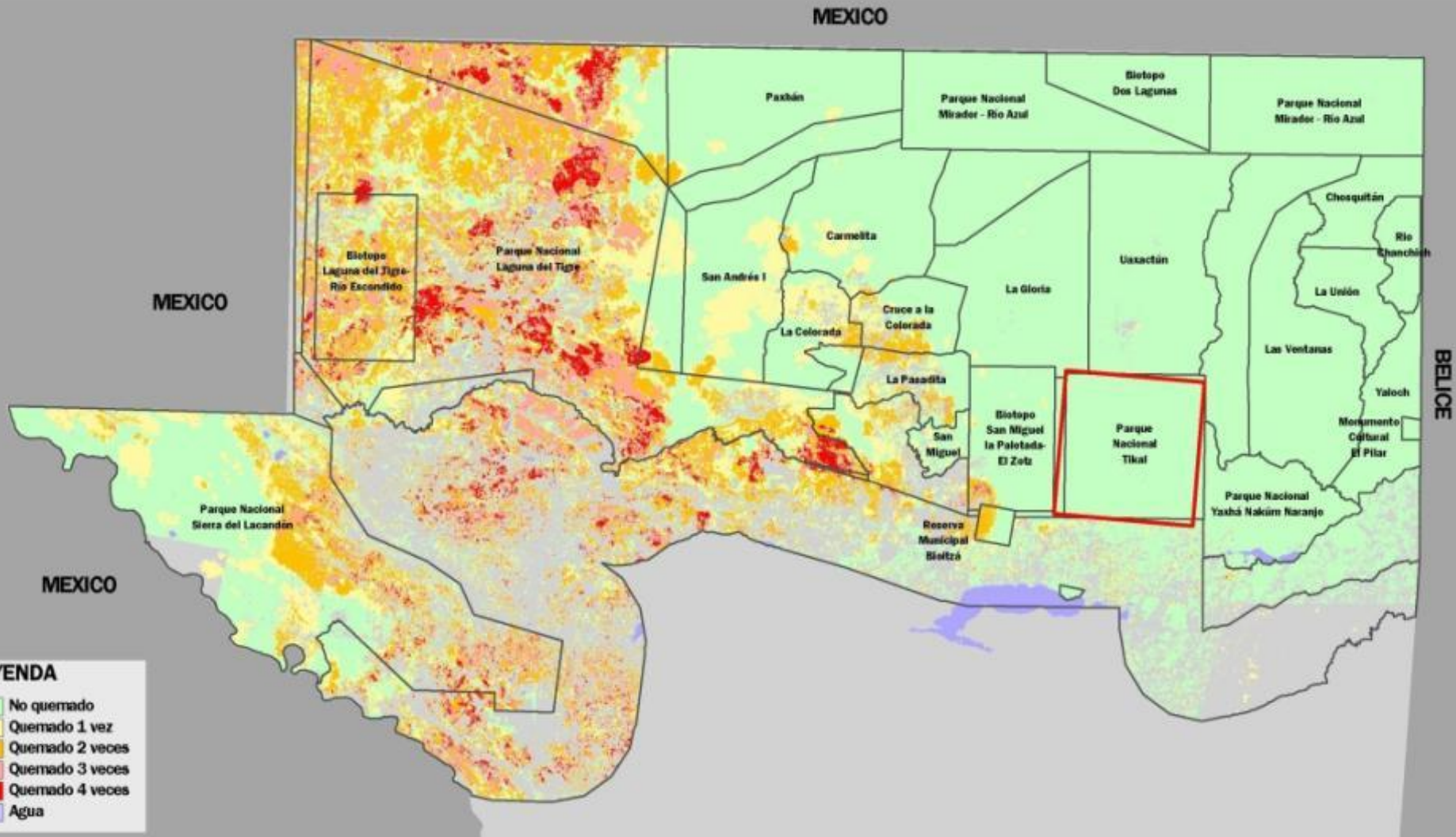
Peten, Guatemala



USAID
FROM THE AMERICAN PEOPLE

Roan Balas McNab
Wildlife Conservation Society
Guatemala Program

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FIRE RELATED ACTIVITIES

- Long term landscape monitoring (deforestation, climate, and fire) + weekly updates during fire season on threat level to 100+ stakeholders

Note: Davis Instruments - Weather stations



MONITORING OF DEFORESTATION AND FIRE IN THE MAYA BIOSPHERE RESERVE



Presidencia de la República
Centro de Monitoreo y Evaluación del Consejo Nacional de Areas Protegidas
Sistema Nacional de Prevención y Control de Incendios Forestales
Wildlife Conservation Society

Con el apoyo de Critical Ecosystem Partnership Fund/Conservation International, Global Conservation Fund/Conservation International, Departamento del Interior de los Estados Unidos y la Agencia para el Desarrollo Internacional de Estados Unidos



Construido parcialmente con datos provenientes de (citado alfabéticamente):

Center for Ocean-Land-Atmosphere Studies, Institute of Global Environment and Society, **COLA-IGES**, Estados Unidos

Climate Prediction Center / NCEP, **NOAA**, Estados Unidos

Comisión Nacional para el Conocimiento y Uso de la Biodiversidad – **CONABIO**- de México

GES-DISC Interactive Online Visualization and Analysis Infrastructure –**GIOVANNI**- de NASA, Estados Unidos

GES Distributed Active Archive Center –**GES DAAC**- de NASA, Estados Unidos

Global Hydrology and Climate Center, Marshall Space Flight Center, **NASA**

Instituto Nacional de Sismología, Vulcanología, Meteorología e Hidrología –**INSIVUMEH**- de Guatemala

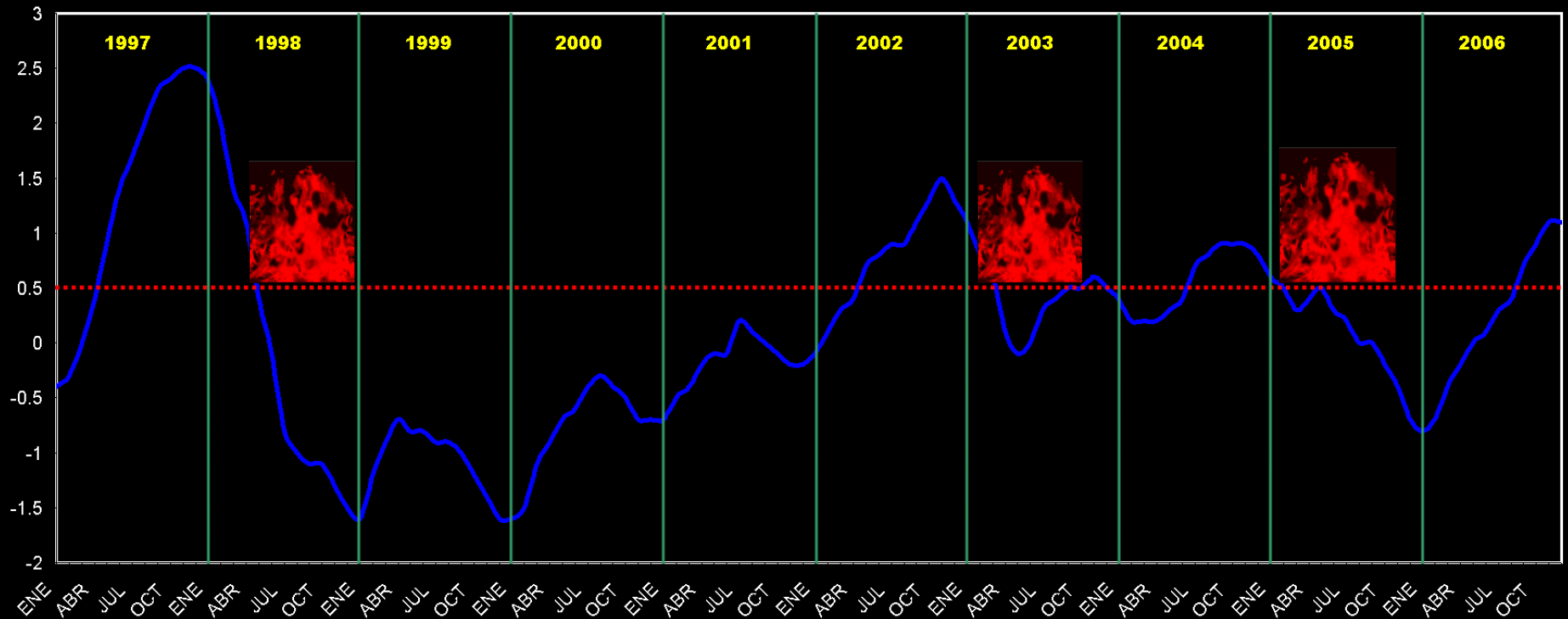
Level 1 and Atmosphere Archive and Distribution System, Goddard Space Flight Center, **NASA**

Sistema Mesoamericano de Visualización y Monitoreo – **SERVIR**- de NASA, CATHALAC, USAID, CCAD y Banco Mundial

Background: the threats

Forest fires

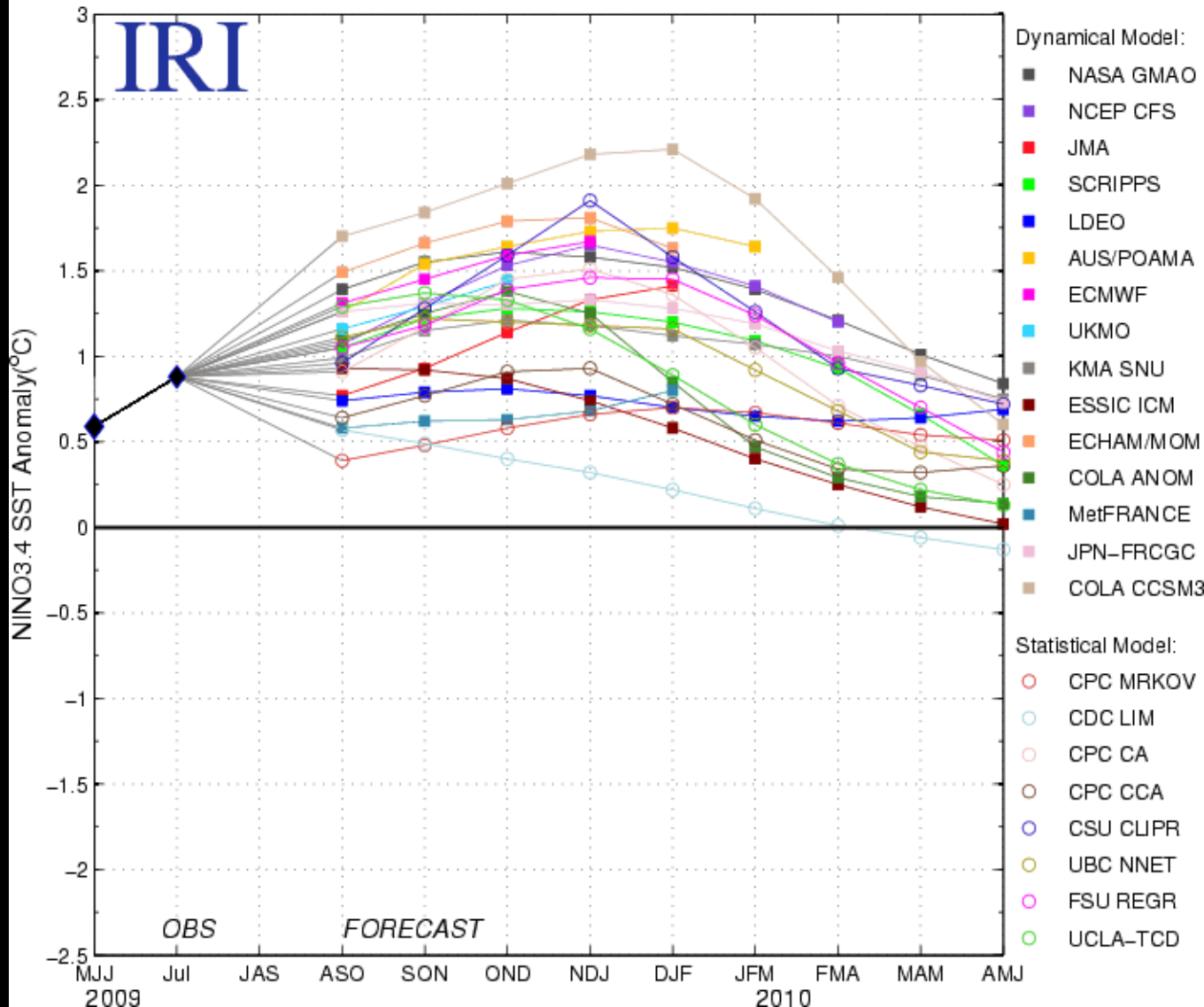
Oceanic Niño Index (ONI) 1997-2006:



SOURCE: Climate Prediction Center / NCEP, NOAA.
CEMEC-CONAP-WCS

EL NIÑO – 2010

Model Forecasts of ENSO from Aug 2009

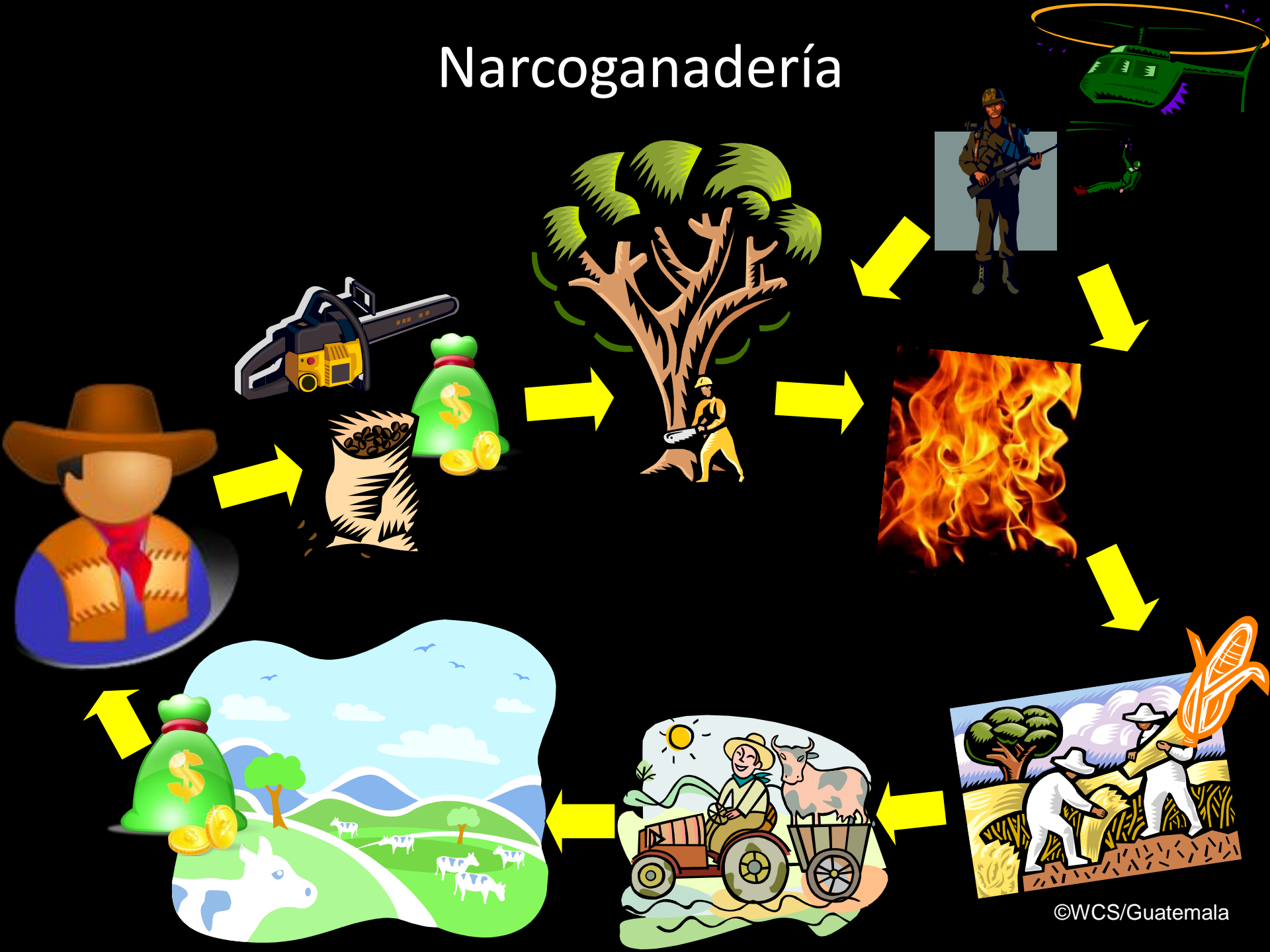


FIRE RELATED ACTIVITIES

- Understanding the genesis of fire threat is key:
 - Agricultural fires out of control
 - Fire used to clear land and undermine conservation objectives (“weapon”)

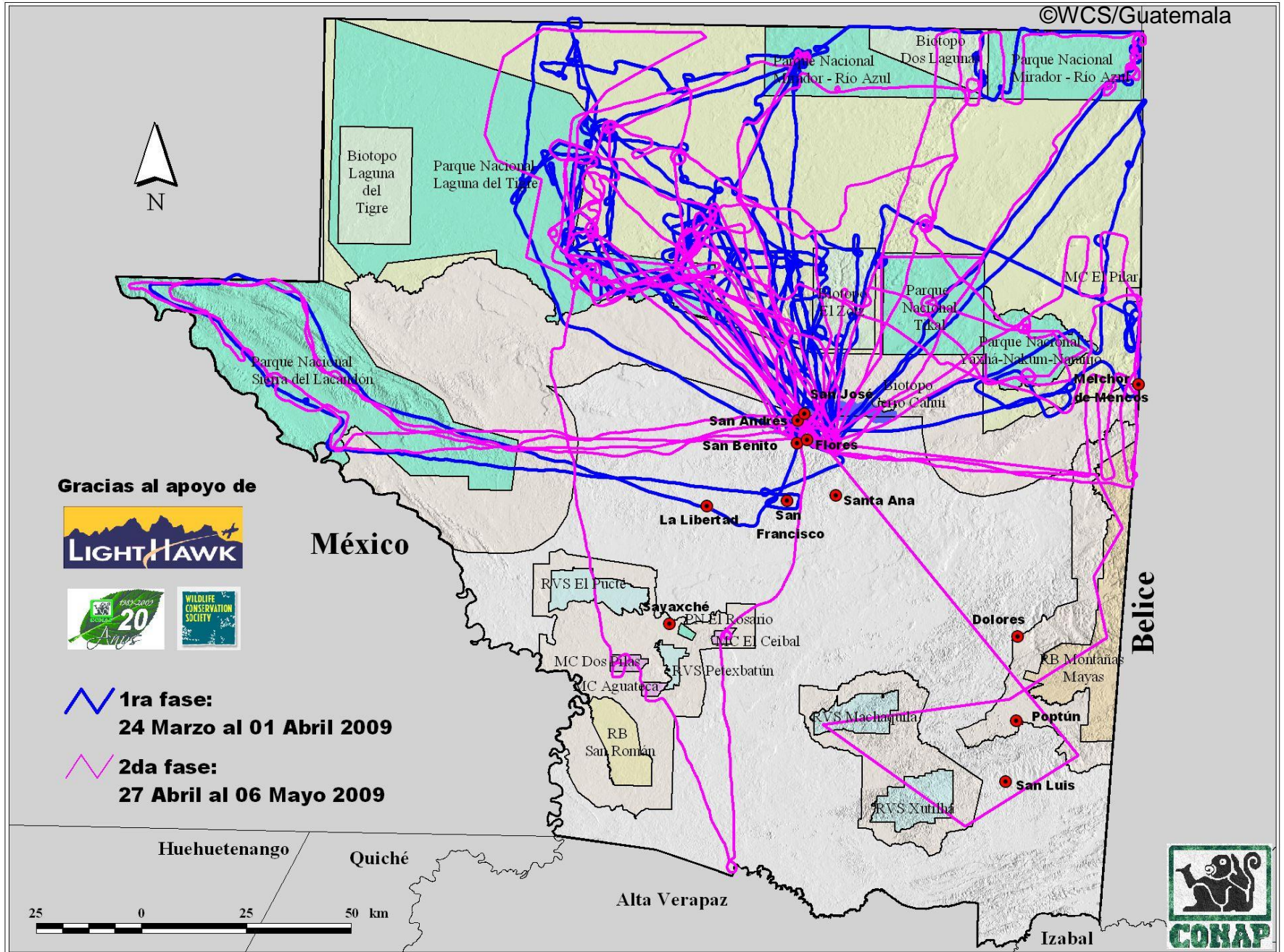


Narcoganadería



Sobrevuelos 2009, Departamento del Petén

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FIRE RELATED ACTIVITIES

- Strengthening community management via:
 - Support for agricultural committees that provide support to fellow farmers during burning season



FIRE RELATED ACTIVITIES

- Strengthening community management via:
 - Support for community-based control and vigilance committees
 - Year round control of deforestation and illegal colonization
 - Rapid response in emergency
 - Equipment, Training, Continued technical support, & Linkages to National Gov't Agencies



FIRE RELATED ACTIVITIES

- Strengthening community management via:
 - Development of a pilot “Early Warning System” for local communities linked into climate monitoring



FIRE RELATED ACTIVITIES

- Strengthening National Fire Prevention Agencies via:
 - Counterpart funding (leveraged)
 - Strategic priority setting based on threats and conservation targets
 - Honest assessments impacts



FIRE RELATED ACTIVITIES

- Testing incentives and setting clear benchmarks
 - CSP Agreement Uaxactun
 - Education investments in communities that agree to control fire (* how to evaluate success/incompliance?)



LESSONS LEARNED

- Fire that is “mismanaged” can be controlled via awareness raising, technical support, and material investments – local communities
- Fire used as a weapon to degrade land and undermine conservation is far more challenging (we are beginning to learn how to do this)
- Holistic approach to governance is fundamental to address the threat of fire used as a weapon:
 - Address the drivers of habitat transformation (i.e. “*Narcoganaderia*”)
 - Policy + enforcement: prevention during the wet season (if possible)
 - USG and international funding should be leveraged to ensure adequate/increased national gov. funding for Fire Prevention Agencies
 - Regular monitoring of deforestation, climate, and fire essential
- Due to the looming threat of climate change, it is essential for many terrestrial programs to develop adaptation strategies for both types of fire
- We should attempt to understand/predict the changes of climate change on ecological, economic, and social systems – and how these changes will affect protected area viability (and increase the threat of fire indirectly)