



Harnessing the power of AI for biodiversity conservation and regeneration

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AI
FOR CLIMATE

Tech4Nature MÉXICO

**Harnessing the power of AI and
community centered approaches to
monitor Jaguars in the Yucatan Peninsula**



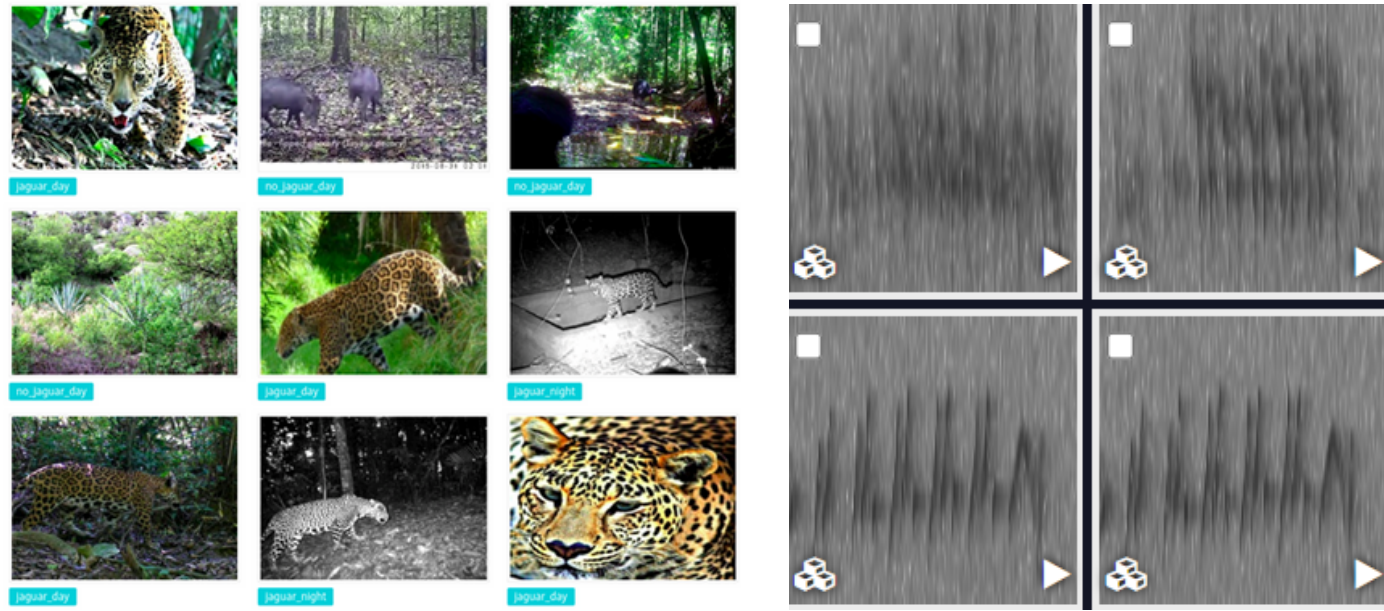












```
model = Sequential()                                # Linear stacking of layers

# Convolution Layer 1
model.add(Conv2D(32, (3, 3), input_shape=(150,150,3))) # 32 different 3x3 kernels -- so 32 feature maps
model.add(BatchNormalization(axis=-1))                # normalize each feature map before activation
convLayer01 = Activation('relu')                      # activation
model.add(convLayer01)

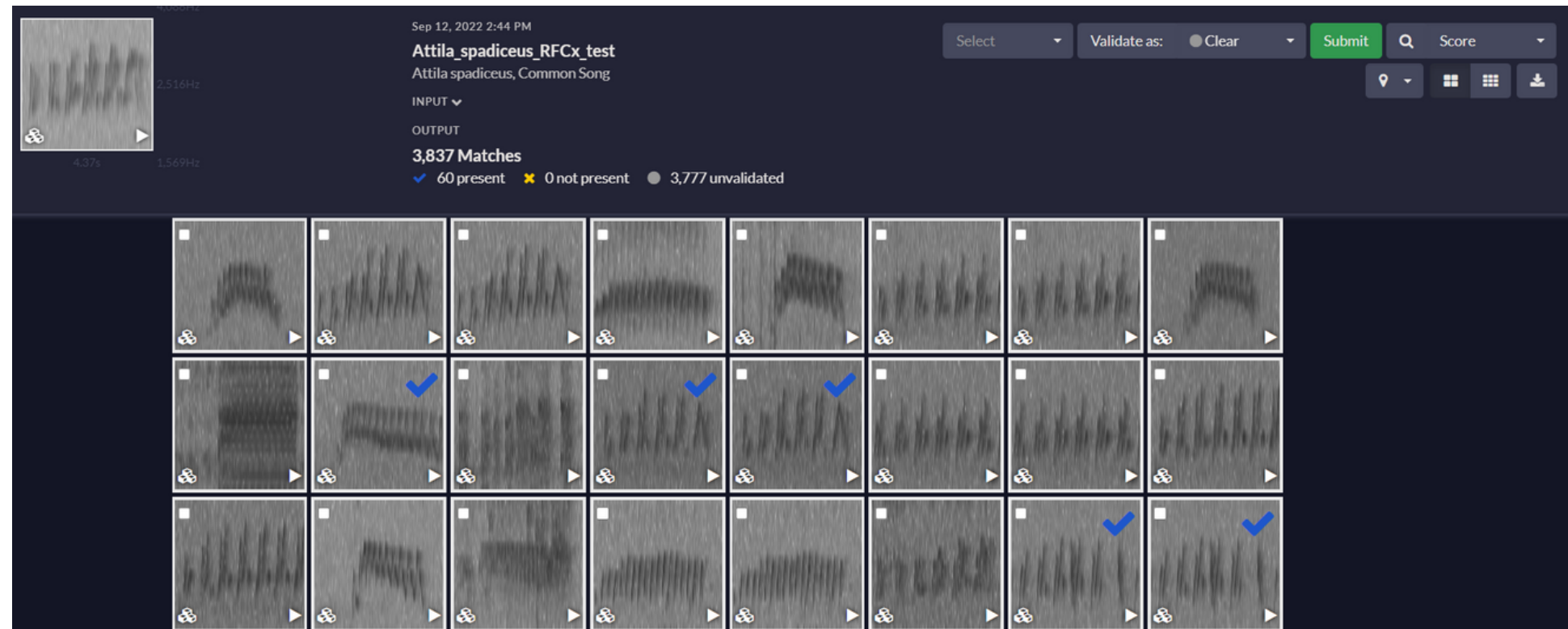
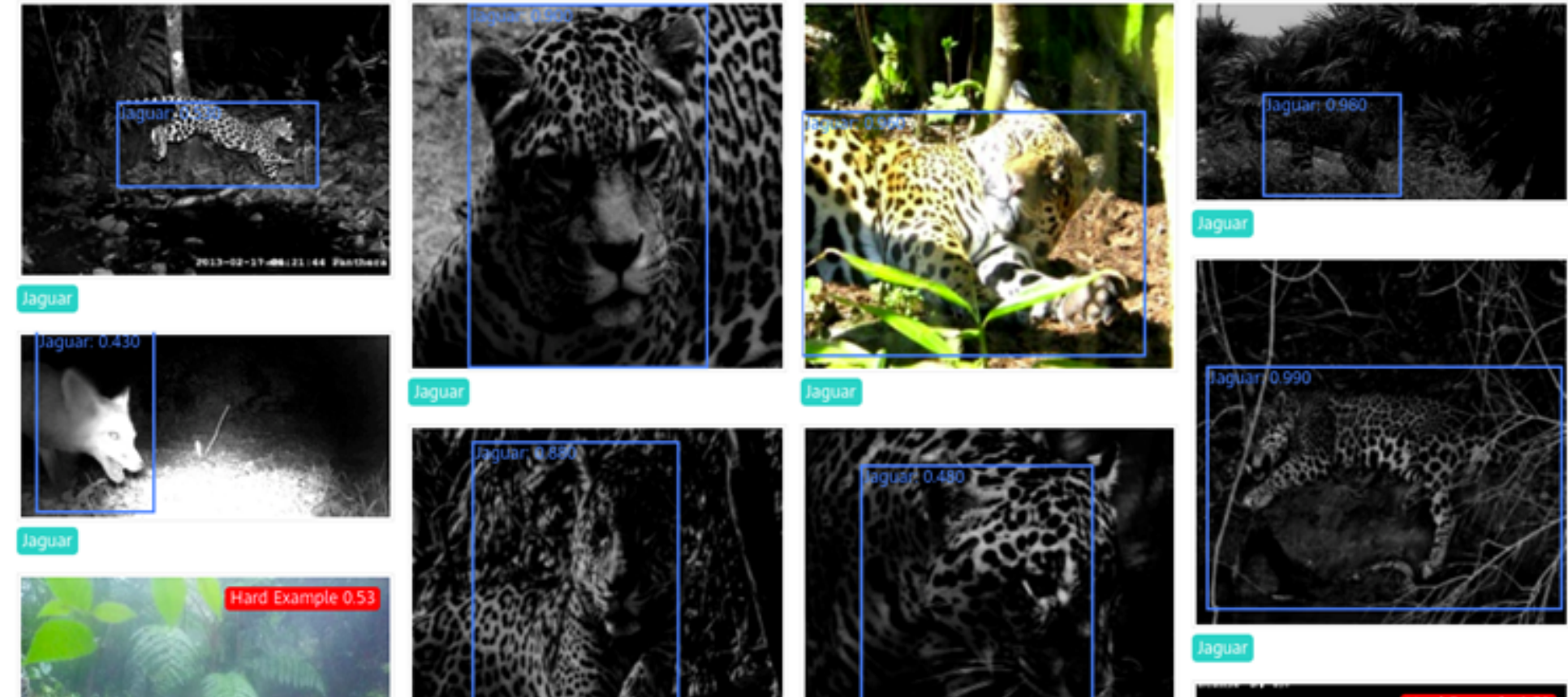
# Convolution Layer 2
model.add(Conv2D(32, (3, 3)))                         # 32 different 3x3 kernels -- so 32 feature maps
model.add(BatchNormalization(axis=-1))                # normalize each feature map before activation
model.add(Activation('relu'))                        # activation
convLayer02 = MaxPooling2D(pool_size=(2,2))           # Pool the max values over a 2x2 kernel
model.add(convLayer02)

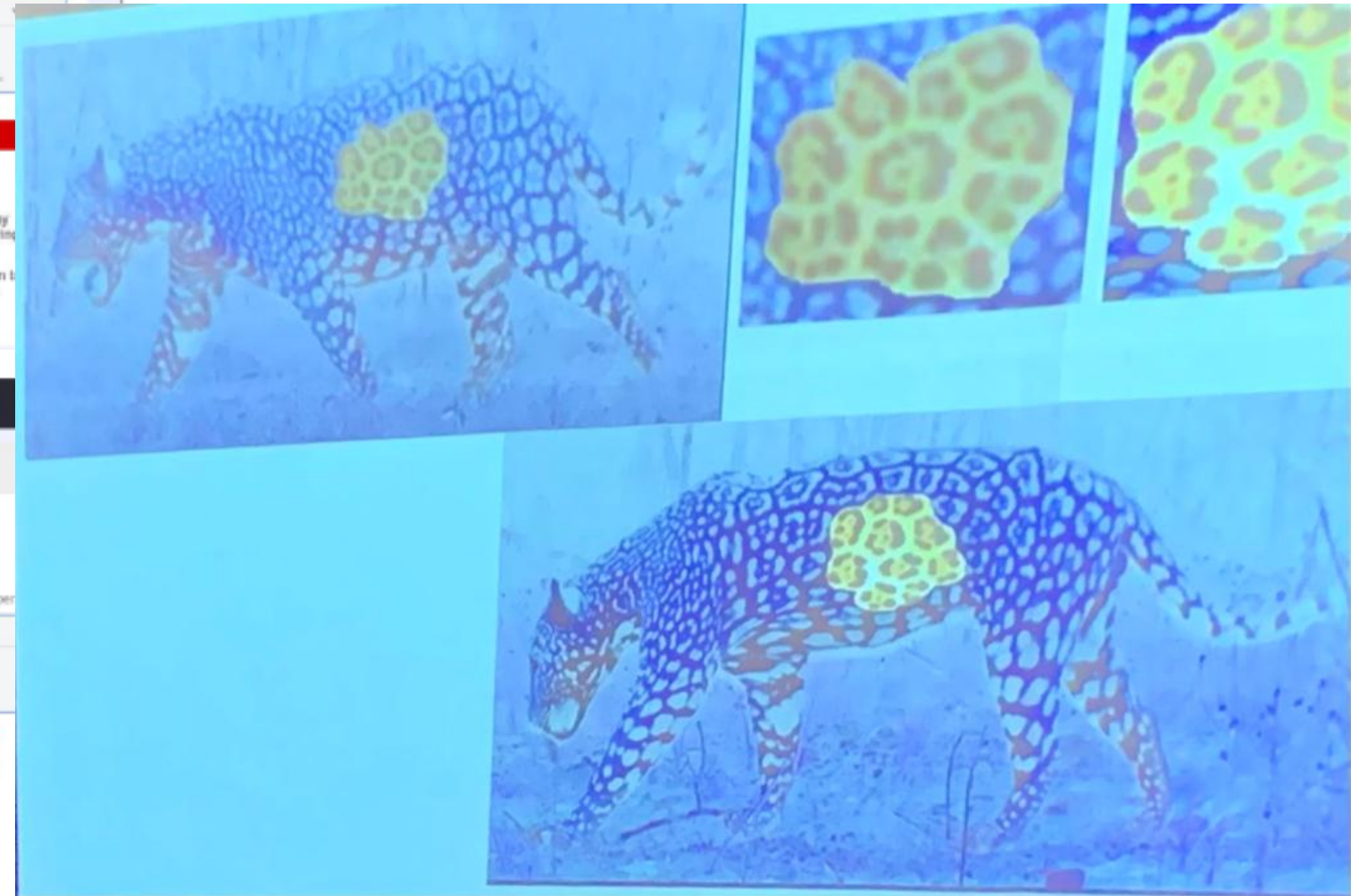
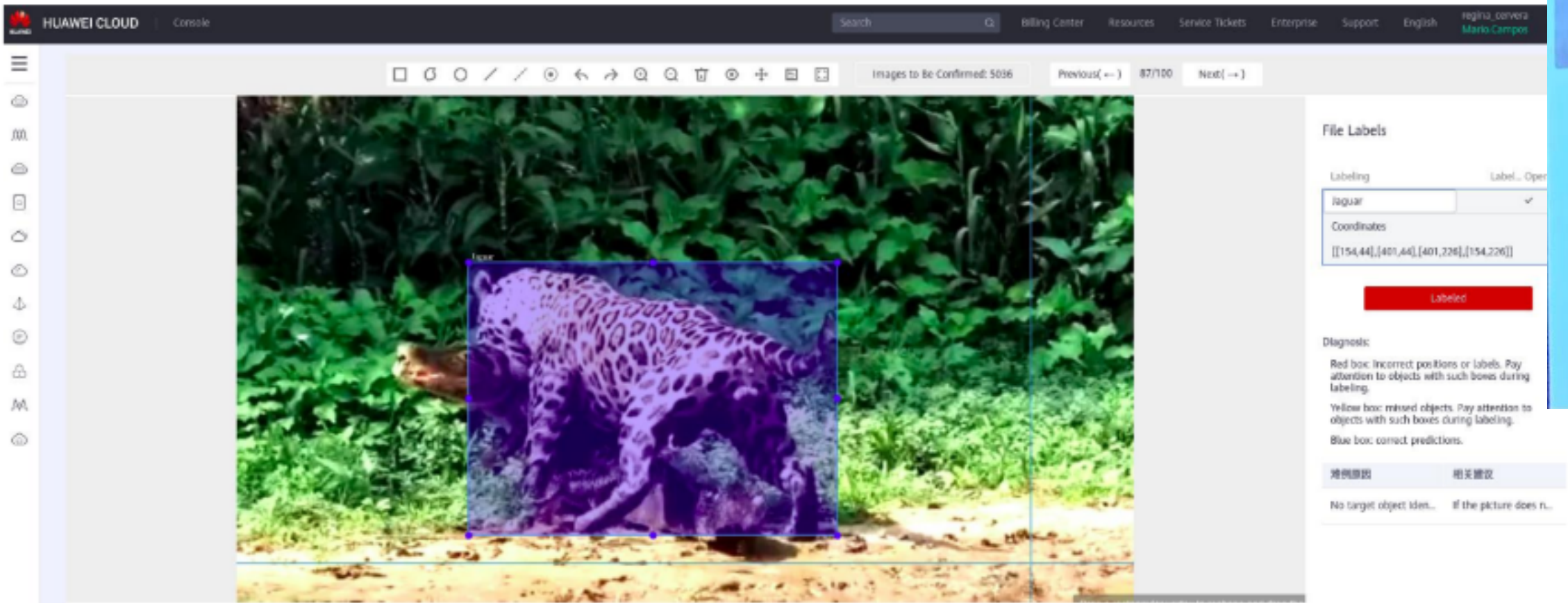
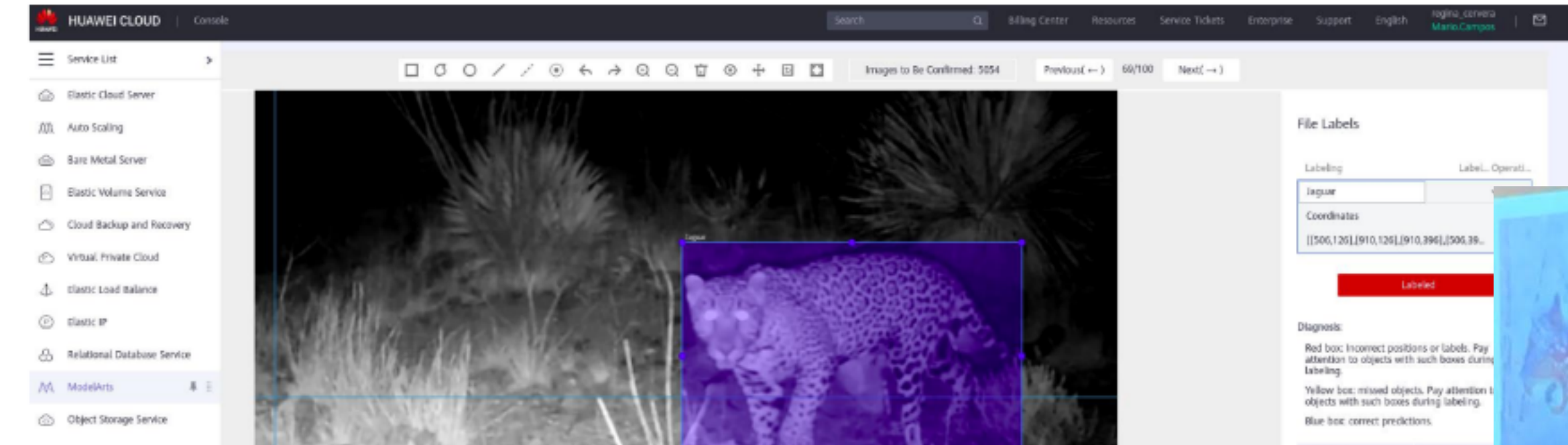
# Convolution Layer 3
model.add(Conv2D(64,(3, 3)))                          # 64 different 3x3 kernels -- so 64 feature maps
model.add(BatchNormalization(axis=-1))                # normalize each feature map before activation
convLayer03 = Activation('relu')                      # activation
model.add(convLayer03)

# Convolution Layer 4
model.add(Conv2D(64, (3, 3)))                         # 64 different 3x3 kernels -- so 64 feature maps
model.add(BatchNormalization(axis=-1))                # normalize each feature map before activation
model.add(Activation('relu'))                        # activation
convLayer04 = MaxPooling2D(pool_size=(2,2))           # Pool the max values over a 2x2 kernel
model.add(convLayer04)
model.add(Flatten())                                  # Flatten final 4x4x64 output matrix into a 1024-length vector

# Fully Connected Layer 5
model.add(Dense(128))                                  # 512 FCN nodes
model.add(BatchNormalization())                       # normalization
model.add(Activation('relu'))                        # activation

# Fully Connected Layer 6
model.add(Dropout(0.5))                                # 20% dropout of randomly selected nodes
```





16k
detections

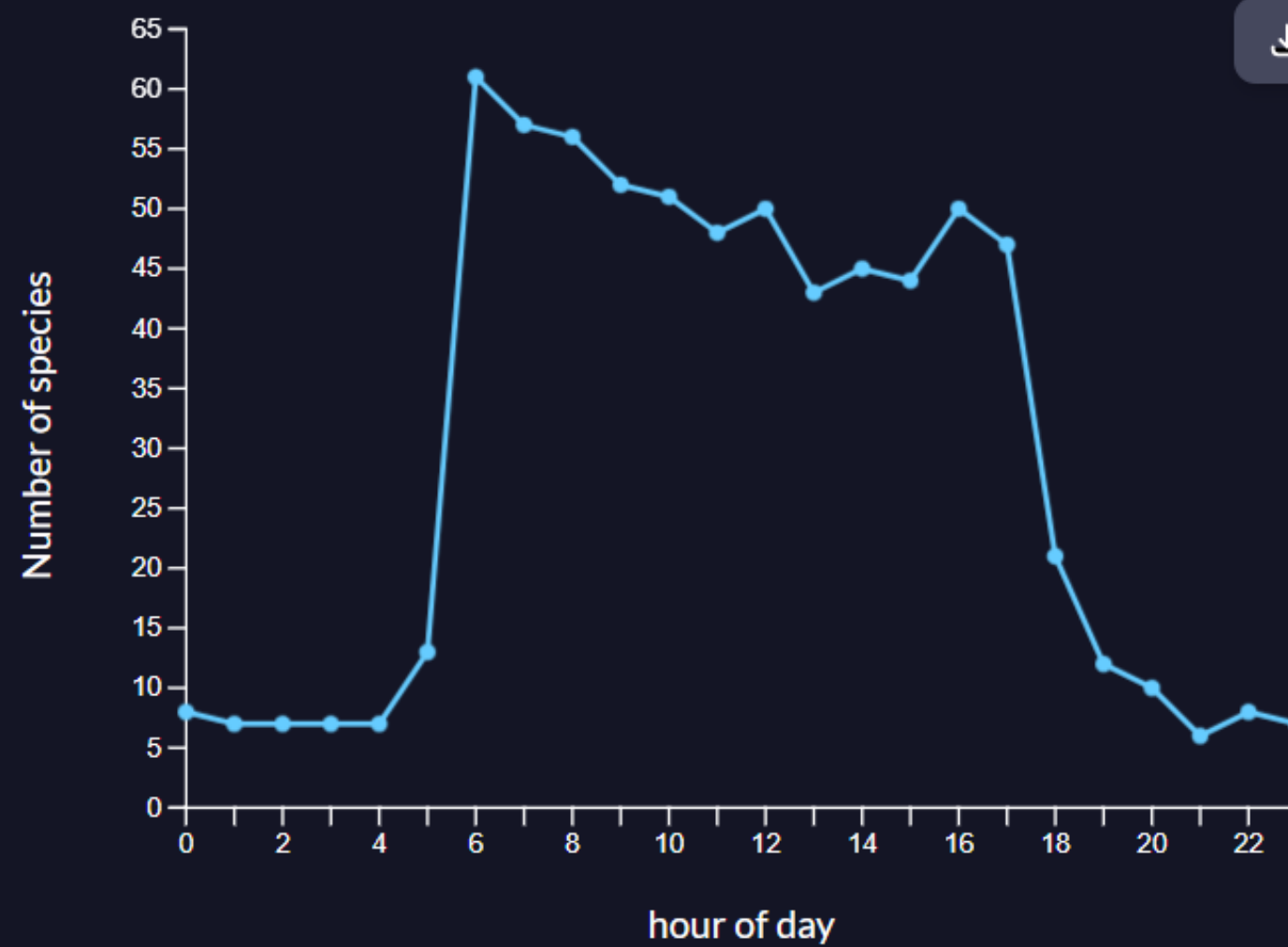
30
sites

3 / 85
threatened

Recording dates: July 20, 2022 - October 18, 2022

Species Richness

Detections (Raw)



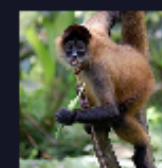
Species highlights

Amphibians 4.7% Birds 94% Mammals 1.2%

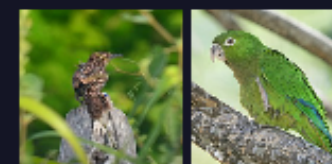
Threatened species

Endangered 1.2% Near Threatened 2.4%
Least Concern 91% Not Evaluated 6%

EN Endangered (1)



NT Near Threatened (2)



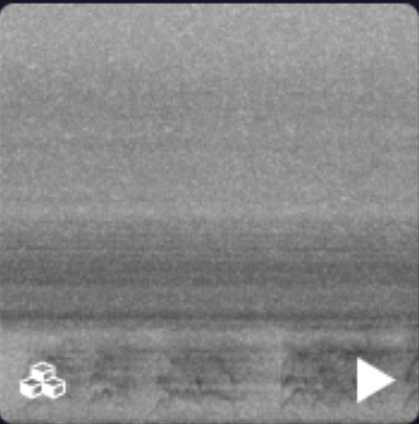
Jamaican Parakeet
(*Eupsittula nana*)

NT



<http://www.birdphotos.com> - some rights reserved (CC BY 3.0)

Detected audio



Description

It is widespread in wooded hills, mountain slopes, scrub, cultivation and gardens in humid or semi-arid areas from sea-level to mid-elevation forest (Haynes-Sutton et al. 2009). The species feeds on the buds and fruit of many trees and on crop species, and has been regarded as a pest (del Hoyo et al. 1997, Haynes-Sutton et al. 2009). It breeds in March (Juniper and Parr 1998). The species is commonest at middle elevations (below 1,000 m)...

[Read more](#) — Source: IUCN Red List

Detection Frequency ⓘ

0.001

Found in 336 out of 416,287 recorded minutes

Detection Frequency ▾ by location

Naive Occupancy ⓘ

0.933

Found in 28 out of 30 sites



- Heatmap
- Point
- Satellite
- Simple
- ☒ Labels









igrac!As!
Thank you!

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