Participatory Mapping in Malawi: Authenticating Local Expertise

By Bill Favitta with special thanks to:

CRC

pact

USAID
FROM THE AMERICAN PEOPLE

Today's Objectives

- Introductions
- Project background
- Planning for year one
- Implementation & Mapping
- Results
- Applying what we found
- Was our methodology scientifically accurate?

Who is this guy?

- Master's of Environmental Science and Management (MESM): Conservation Biology
- Graduate Certificate of GIS and Remote Sensing
- Coastal Resources Center
  - Research Assistant with the International Team: Malawi FISH Project

Malawi FISH Project

Fisheries Integration of Societies and Habitats

Goals:

- "increased social, ecological and economic resilience of freshwater ecosystems and people who depend on them"

Planning Year One:

Aquatic Biodiversity Assessment

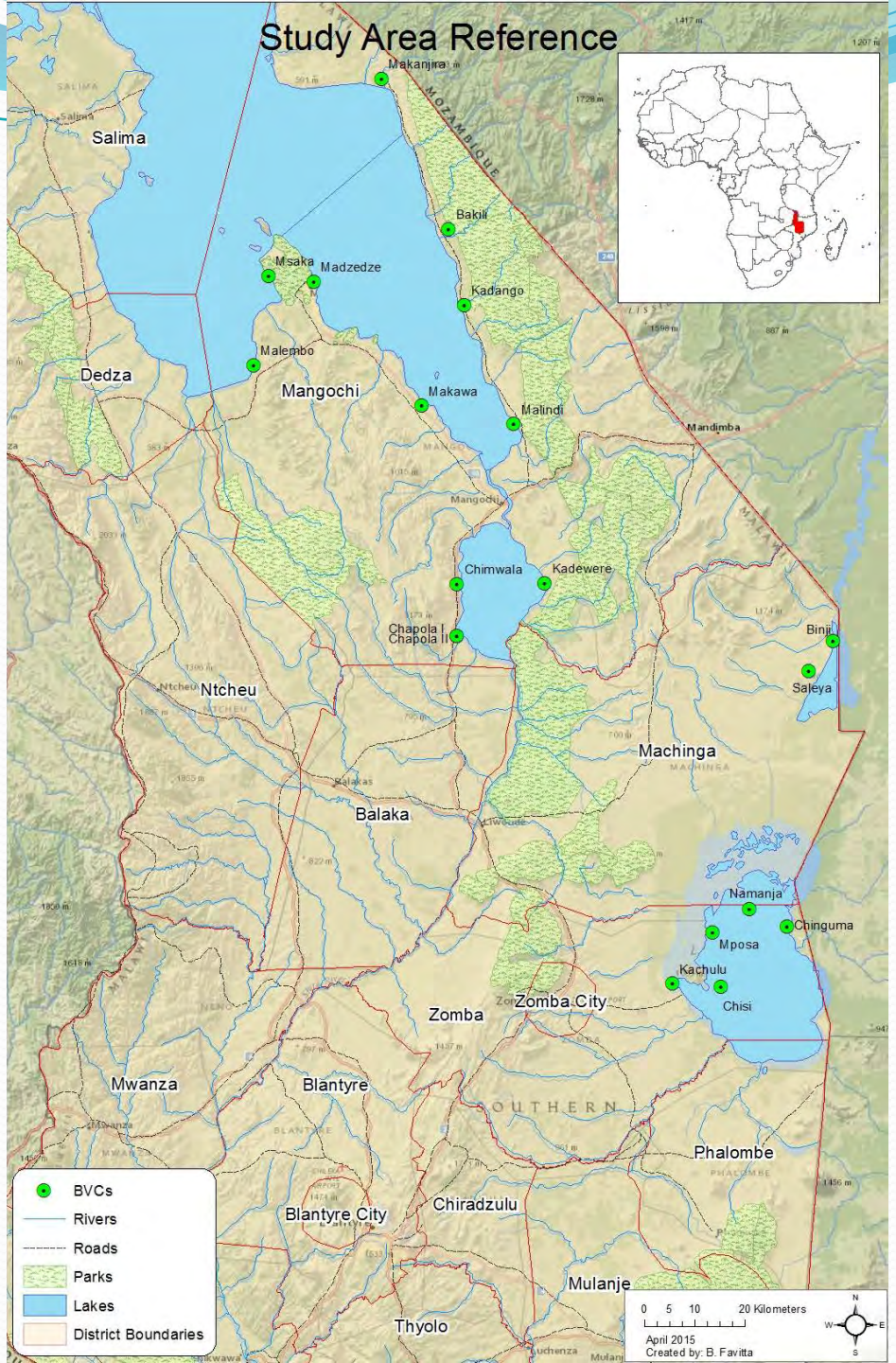
- Literature Review
- Environmental threats and opportunities assessment (ETOA).
- Biodiversity hotspot mapping.

Climate Change & Resilience

- Literature Review
- Environmental threats and opportunities assessment.
- Vulnerability assessment based on CC indicators.

The Study Area

http://wwwnc.cdc.gov/travel/images/map-malawi.png



Jumping in:

- Meeting the team!
- Creating a system

Methodology

Team
- Gather Data
- Consolidate into paper maps

Me
- Digitize paper maps
- Processing

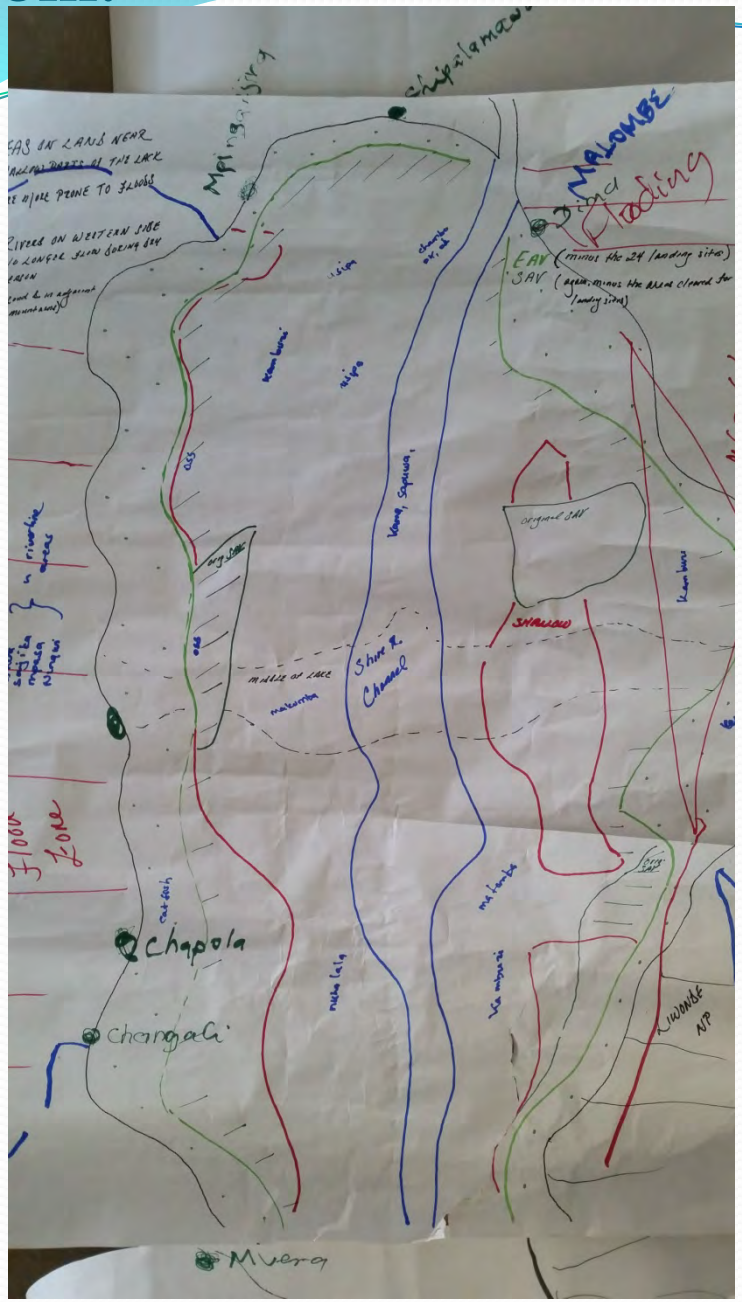
Experts
- Verify local expertise
- Corrections

Me
- Edits
- Processing

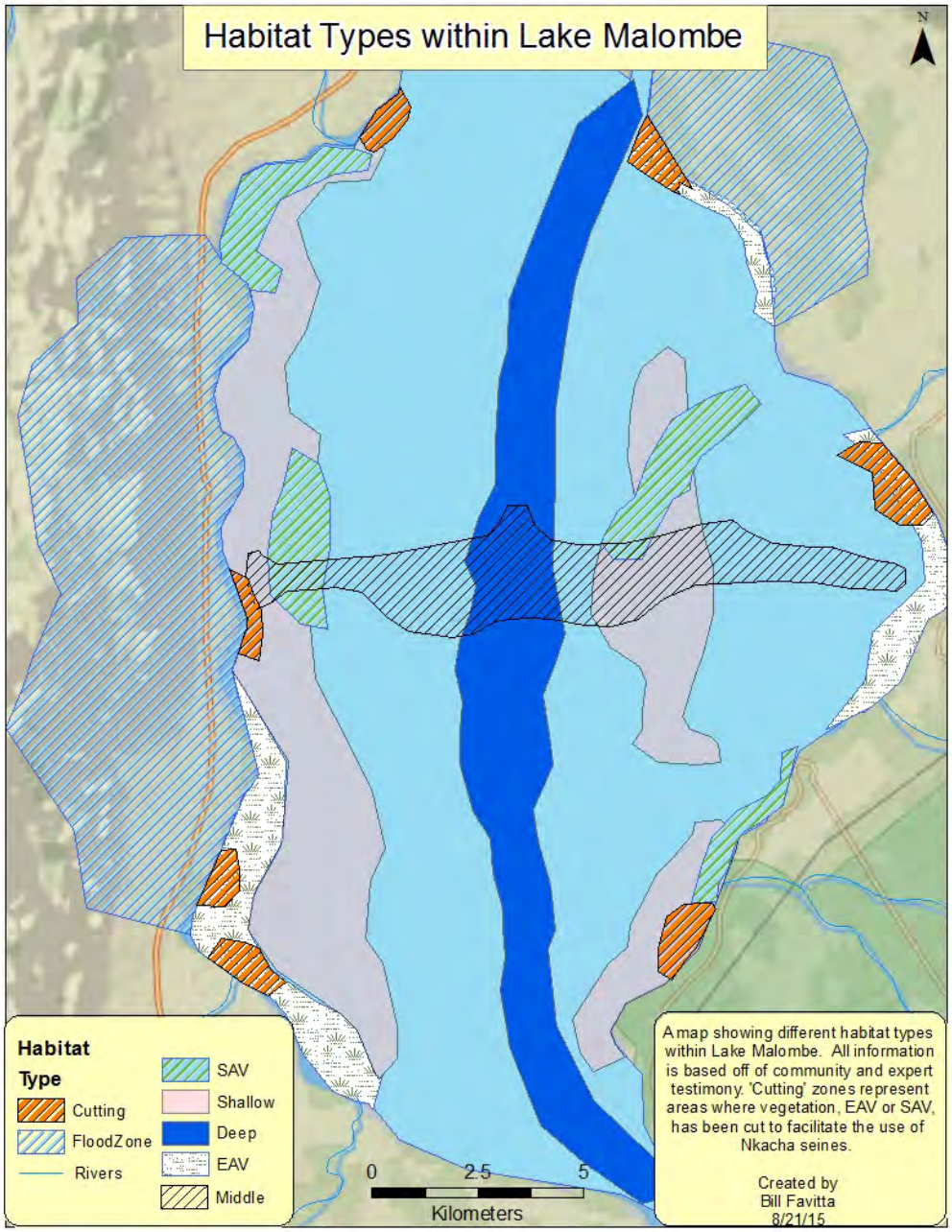
Team
- Secondary field validation

Me
- Edits
- Processing

From:


MALOMBE
Flooding
EAV
SAV
Chapola
Changaci
Mvera

To:


Habitat Types within Lake Malombe
N
Habitat Type
Cutting
FloodZone
Rivers
SAV
Shallow
Deep
EAV
Middle
0
2.5
5
Kilometers
A map showing different habitat types within Lake Malombe. All information is based off of community and expert testimony. 'Cutting' zones represent areas where vegetation, EAV or SAV, has been cut to facilitate the use of Nkacha seines.
Created by
Bill Favitta
8/21/15

Step One: Data Collection

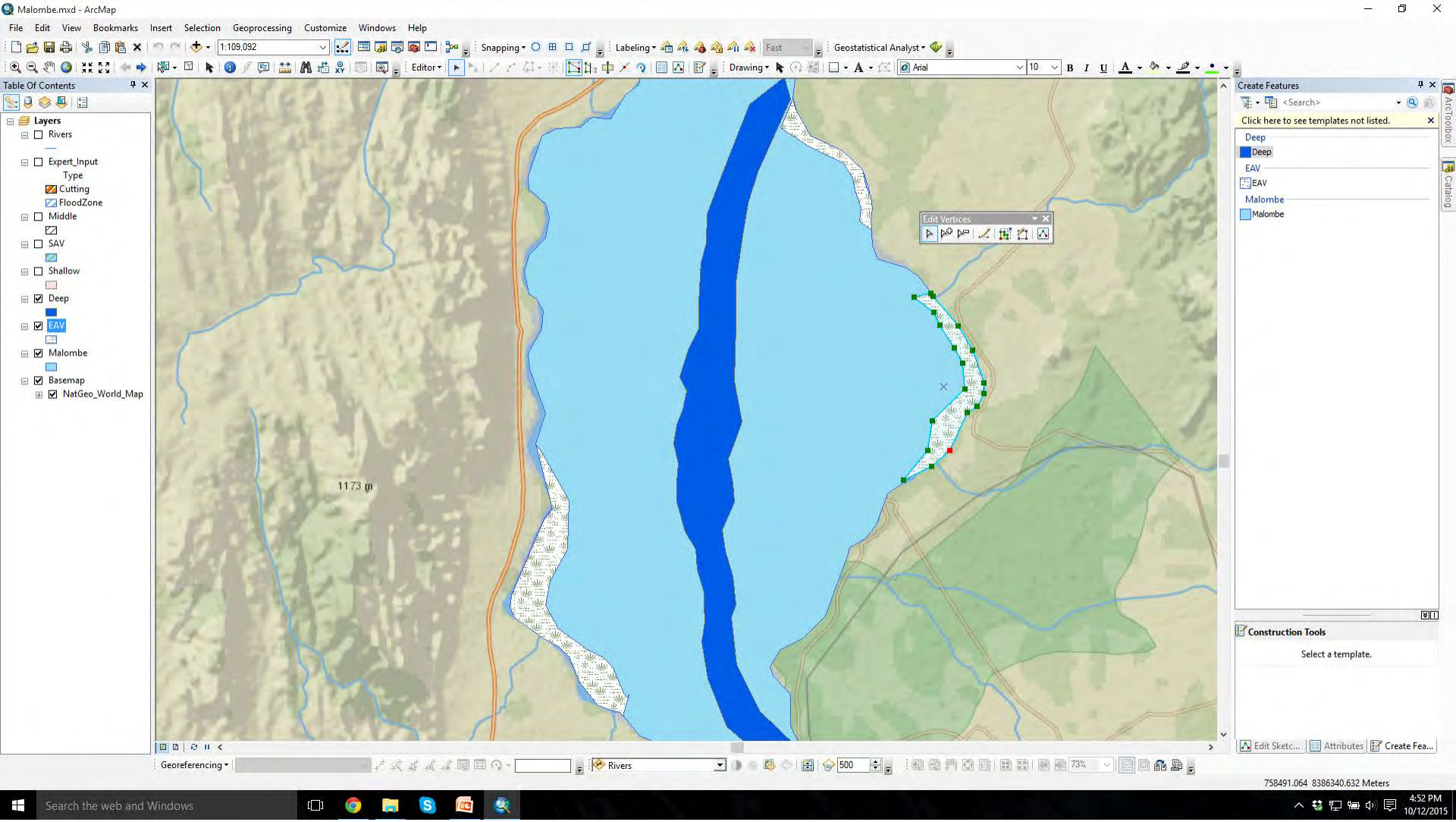
Photo Credit: Glenn Ricci

- Fisheries extension team visited each community and gathered both habitat and biodiversity data.
- Preliminary maps were created to assist digitization.

Step Two: Habitat Mapping

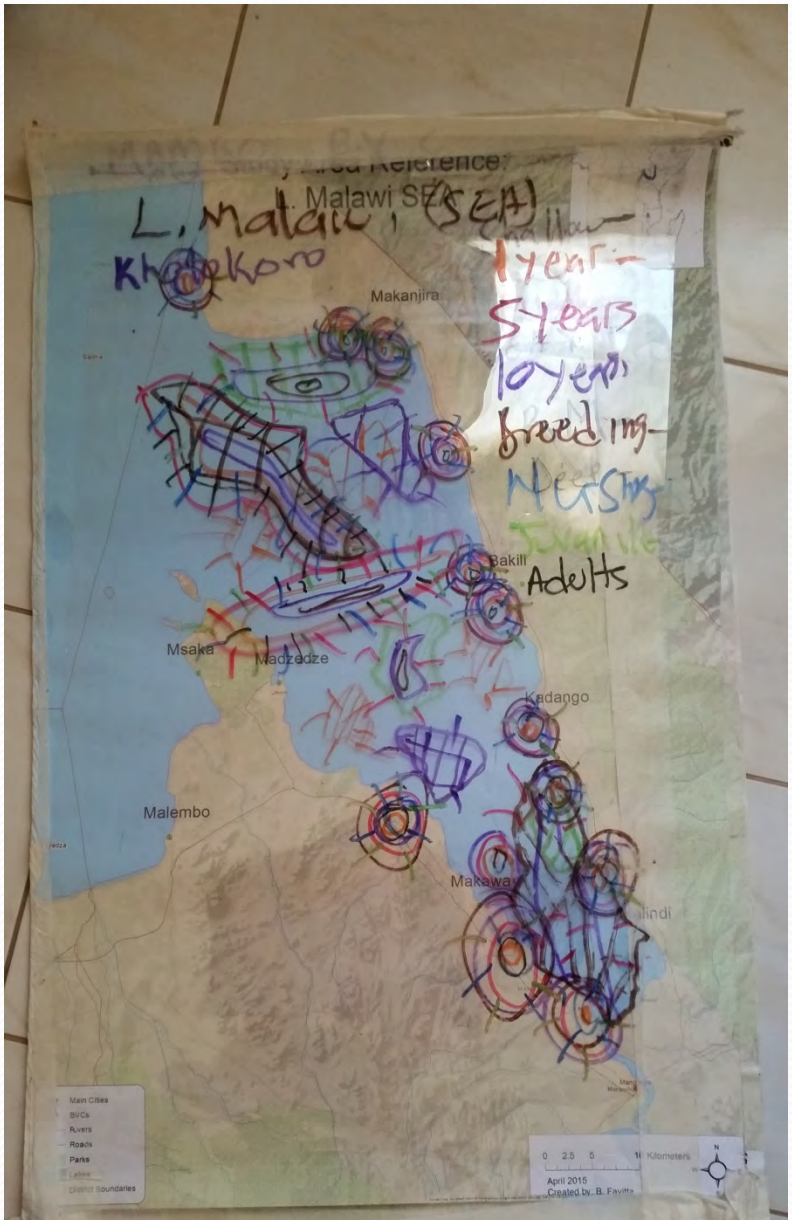
- Initial field visit data was consolidated.
- FISH Extension Team transferred habitat data onto blank maps of target areas.

Step Three: Digitizing



Step Four: Adding Fish

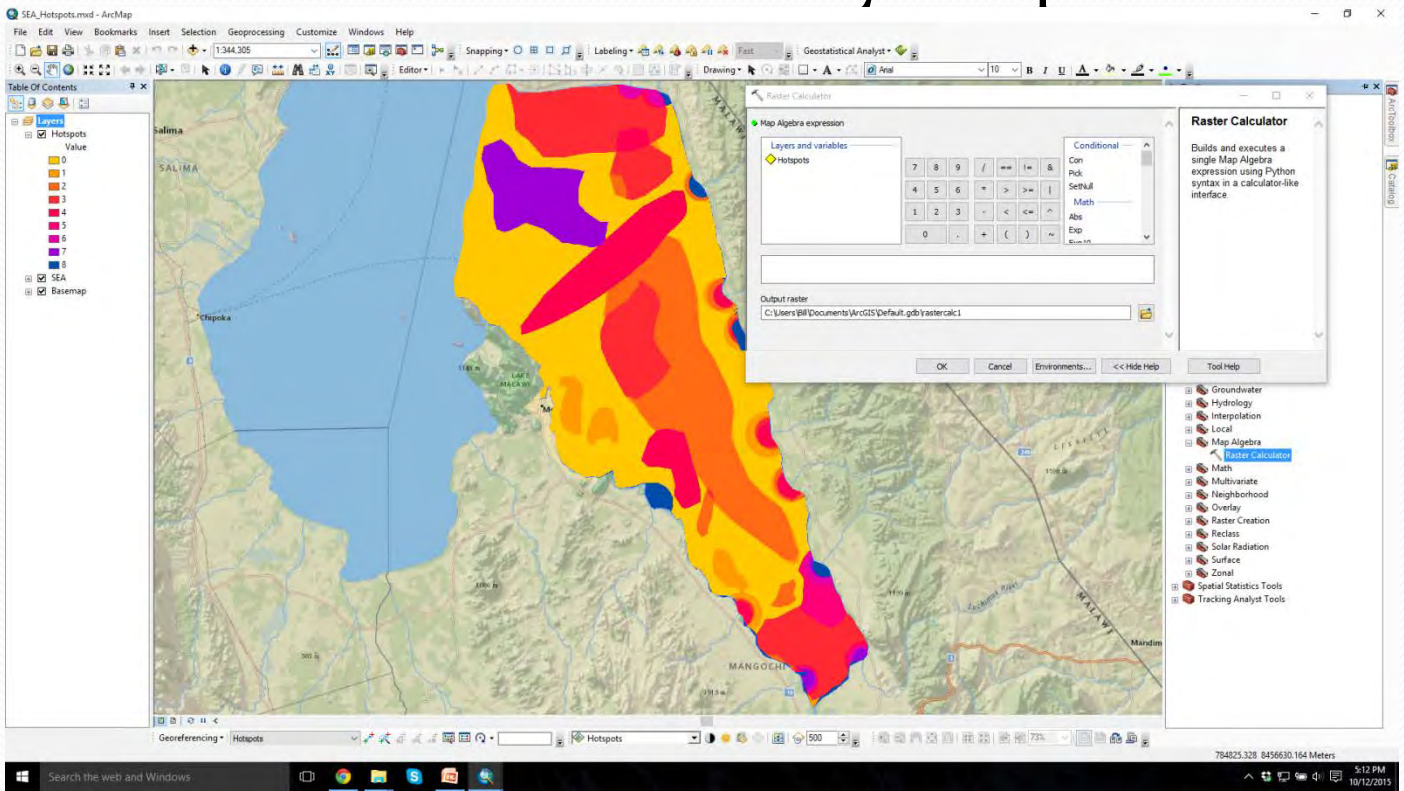
- Biodiversity data added as an overlay for digitization.
- Using habitat as reference points, fish species were added individually by life stage (Breeding, Nursery, Juvenile, Adult).



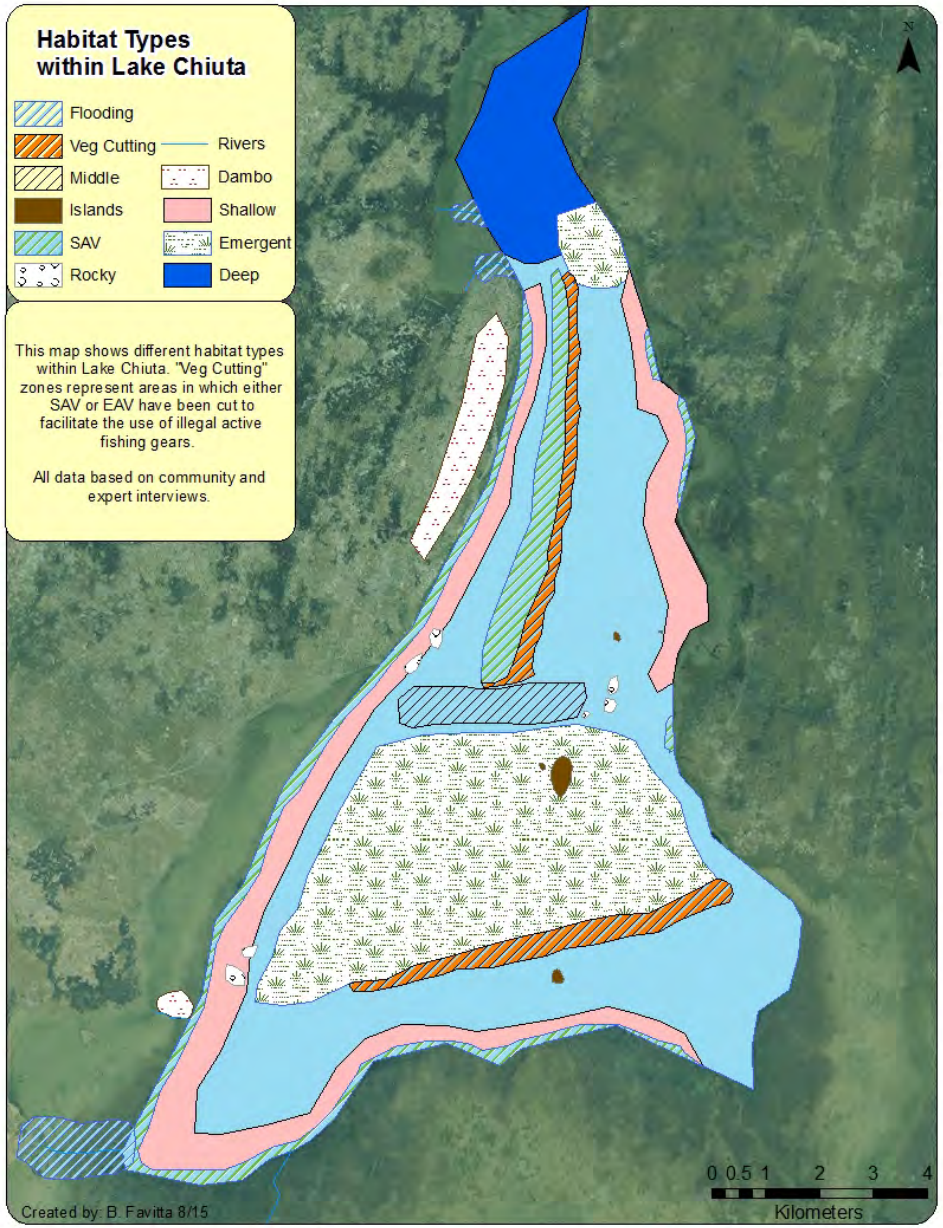
Steps Five +: Processing

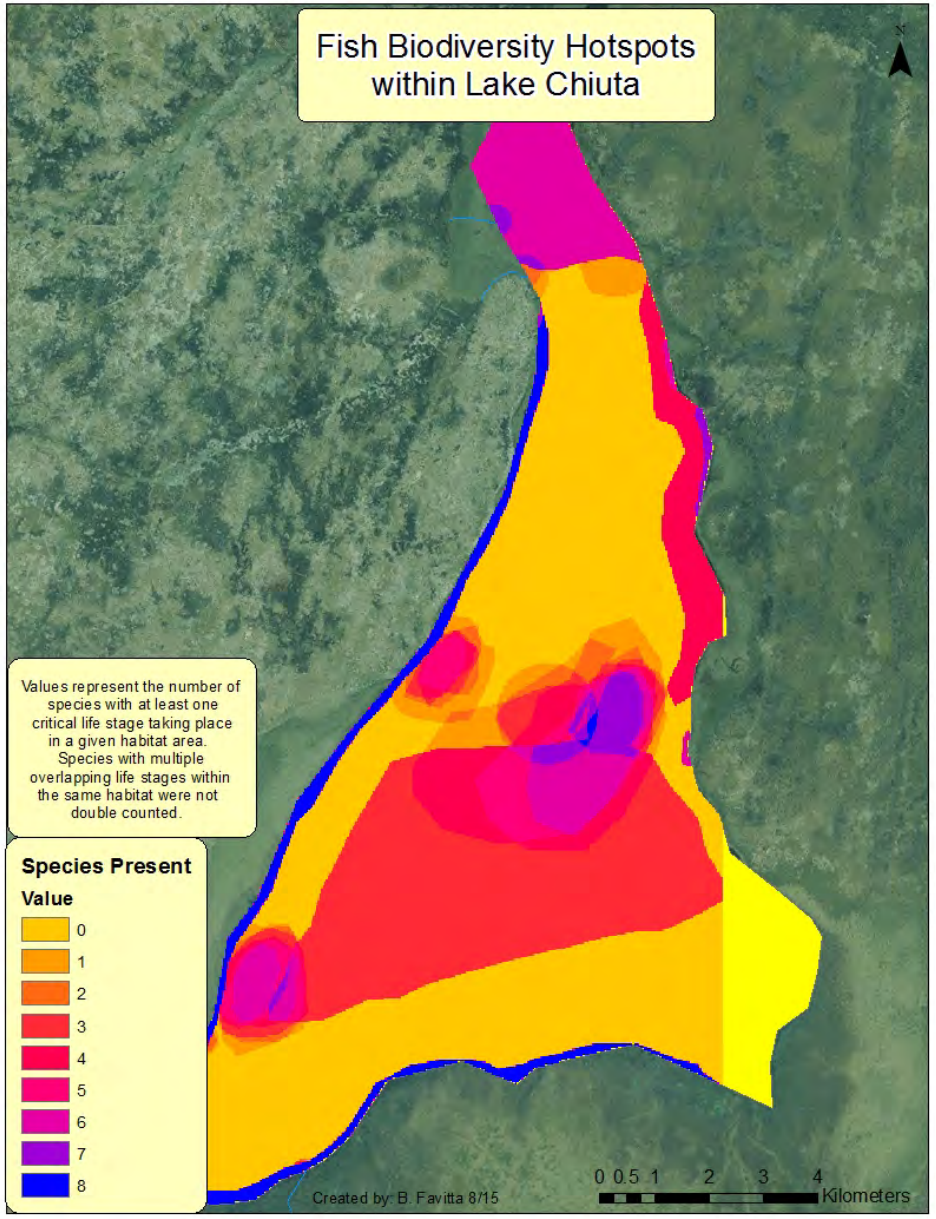
- Creating raster data.

- Using rasters to calculate biodiversity hotspots.

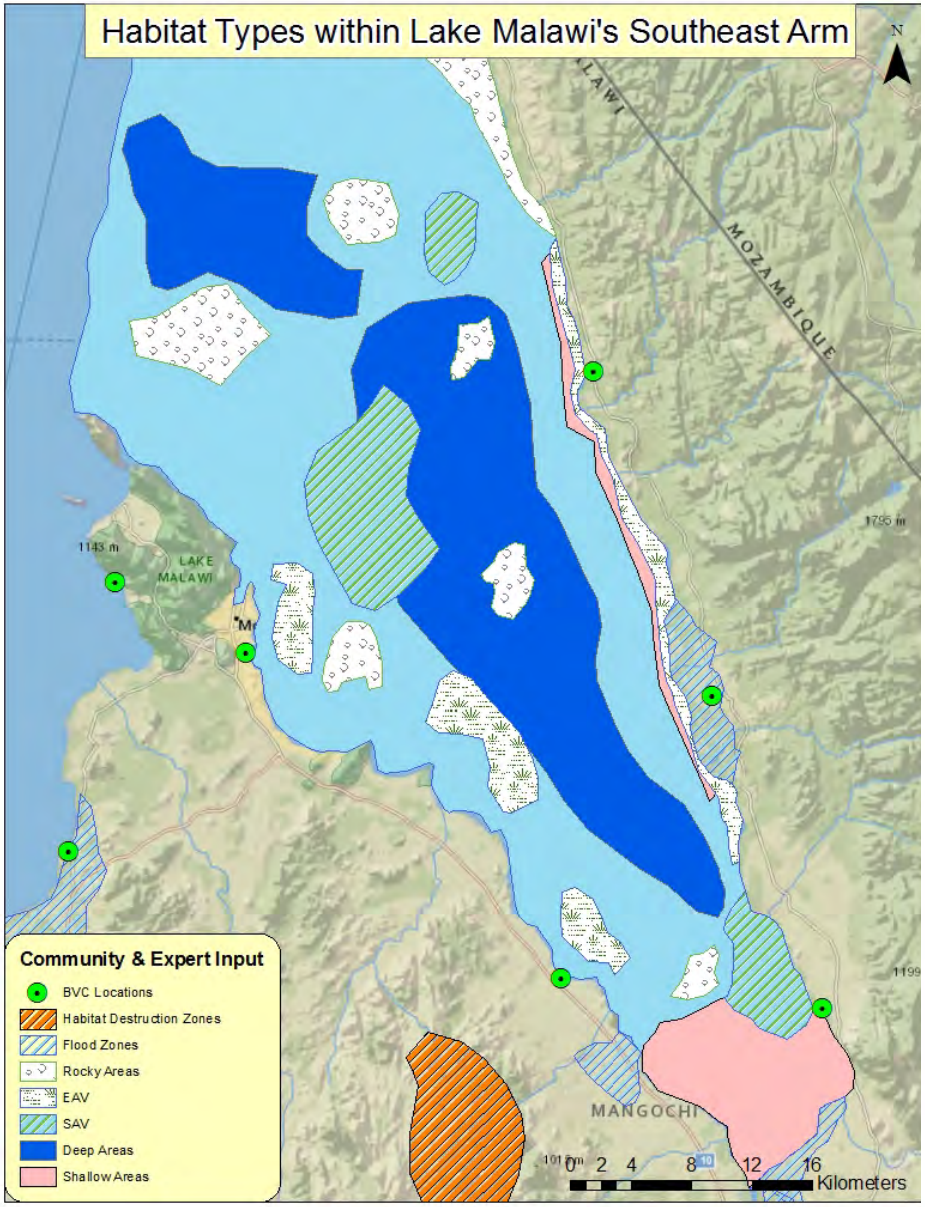


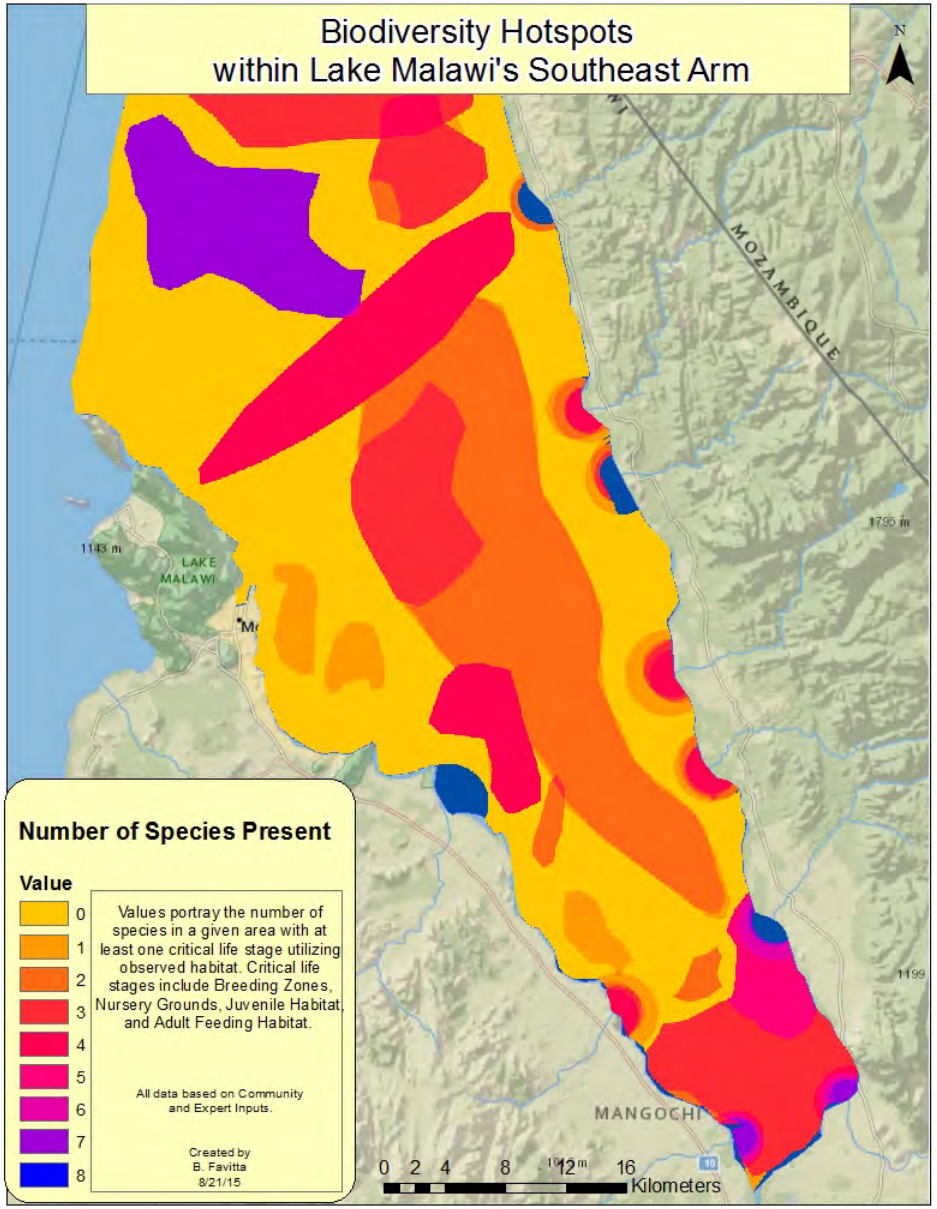
Results- Lake Chiuta





Results – Lake Malawi SEA





How do we use what we found?

- Identify target sites
- Monitoring & Evaluation
- Update environmental policy to reflect reality
- Report back to communities involved

Photo Credit: Glenn Ricci

The Efficacy of Social Science

Photo Credit: Glenn Ricci

- Local Expertise
  - Tacit Knowledge
- Interactional Expertise
  - Learning through exposure
- Redundancy/Consistency
- Validation

How to Make Social Science Work

- Communication***
- Follow Through
- Transparency
- Community involvement vs. community input

Questions?