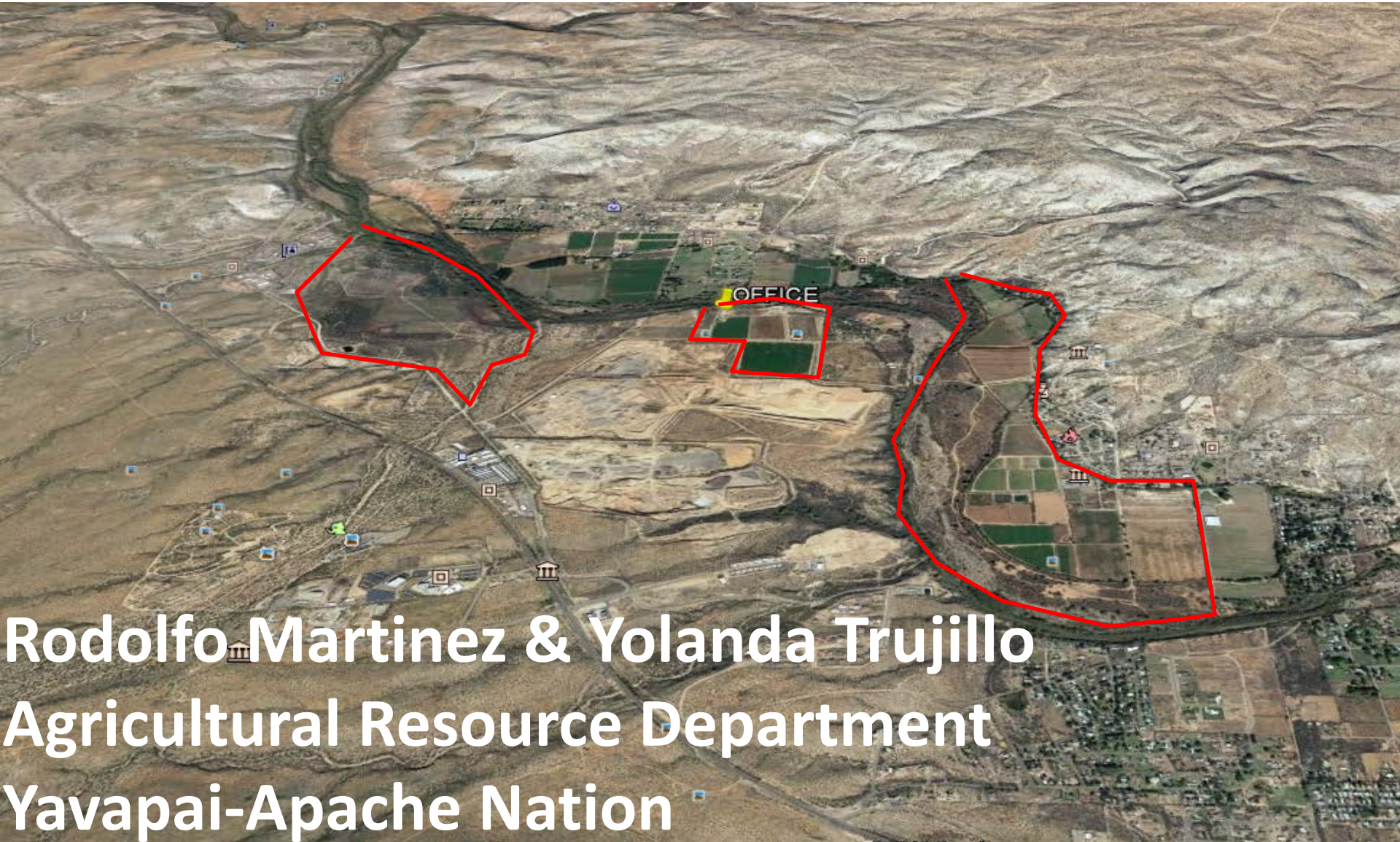
A Landscape Approach on Invasive Weeds Management at Clover Leaf Ranch



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Ecology of Invasive Weeds

- Weeds are prolific seeders (single plants produce thousands of seeds).

- Seeds are blown by the wind and remain alive in the soil for more than 10 years.

Many weeds also emerge from rhizomes which are roots of established plants.

- Rhizomes grow during the spring even without rainfall.
- This happens because rhizomes come from deep roots, where residual moisture is sufficient for the plant to grow and produce new seeds.

Common weeds at the Verde Valley

Tumble weed

Johnson grass

Morning Glory

Field Sandbur

Yellow Star thistle

Foxtail

Wild Mustard

Silver Leaf

Nightshade

Goat Head

Kochia or

Fire Weed

Dessert

Broom

Weed control

- Optimal when done before plants produce fresh seeds.
- Mow or apply herbicide during flowering as plants have exhausted both, stored carbohydrates and moisture.

- Seeds remaining in the soil must also be treated with pre-emergent herbicides to reduce the seed bank.
- This will decrease the amount of weeds germinating at the onset of monsoonal rains.

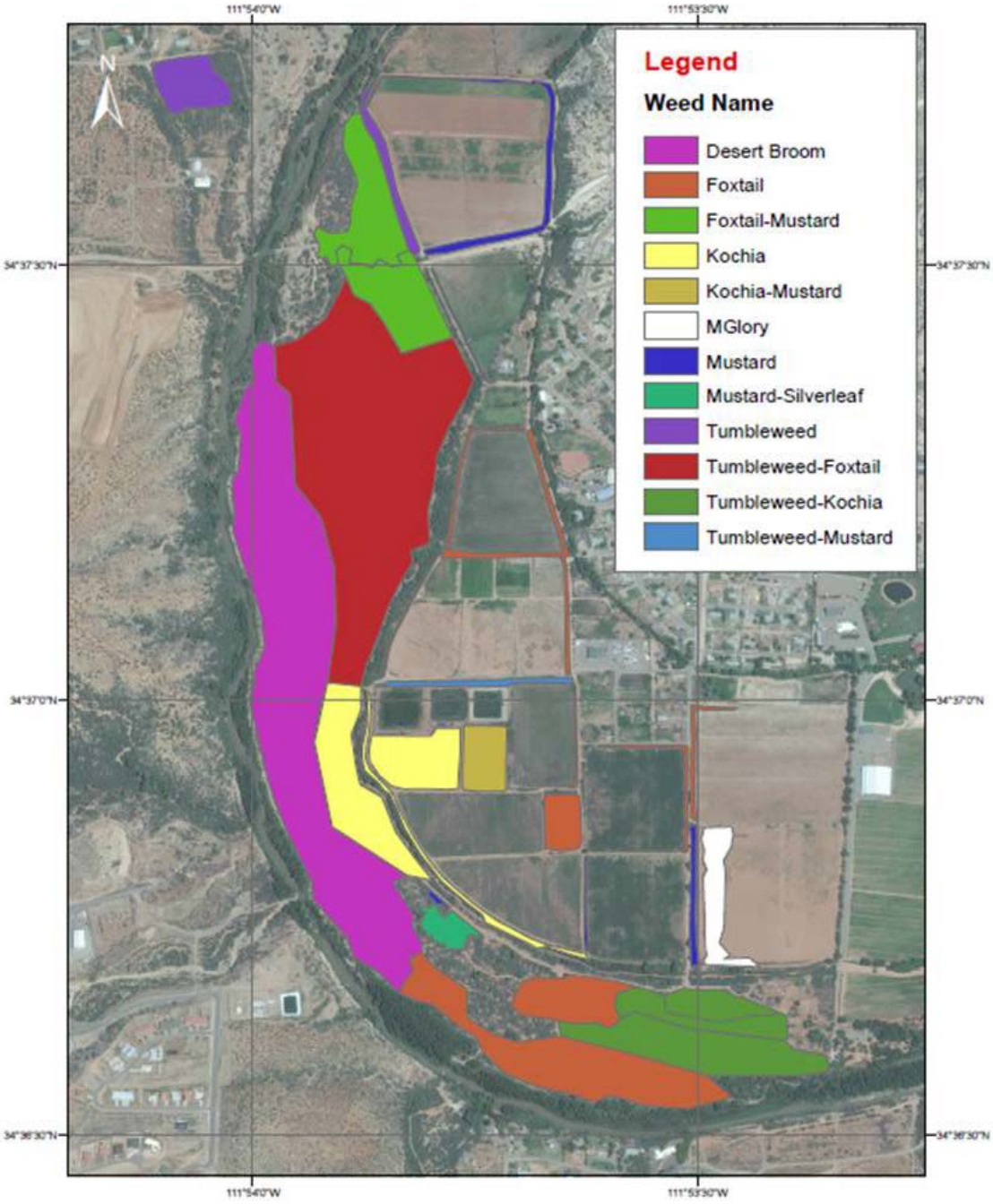
Invasive Weeds Mapping at Clover Leaf Ranch

Weeds mapping is important for effective management as it allows determining:

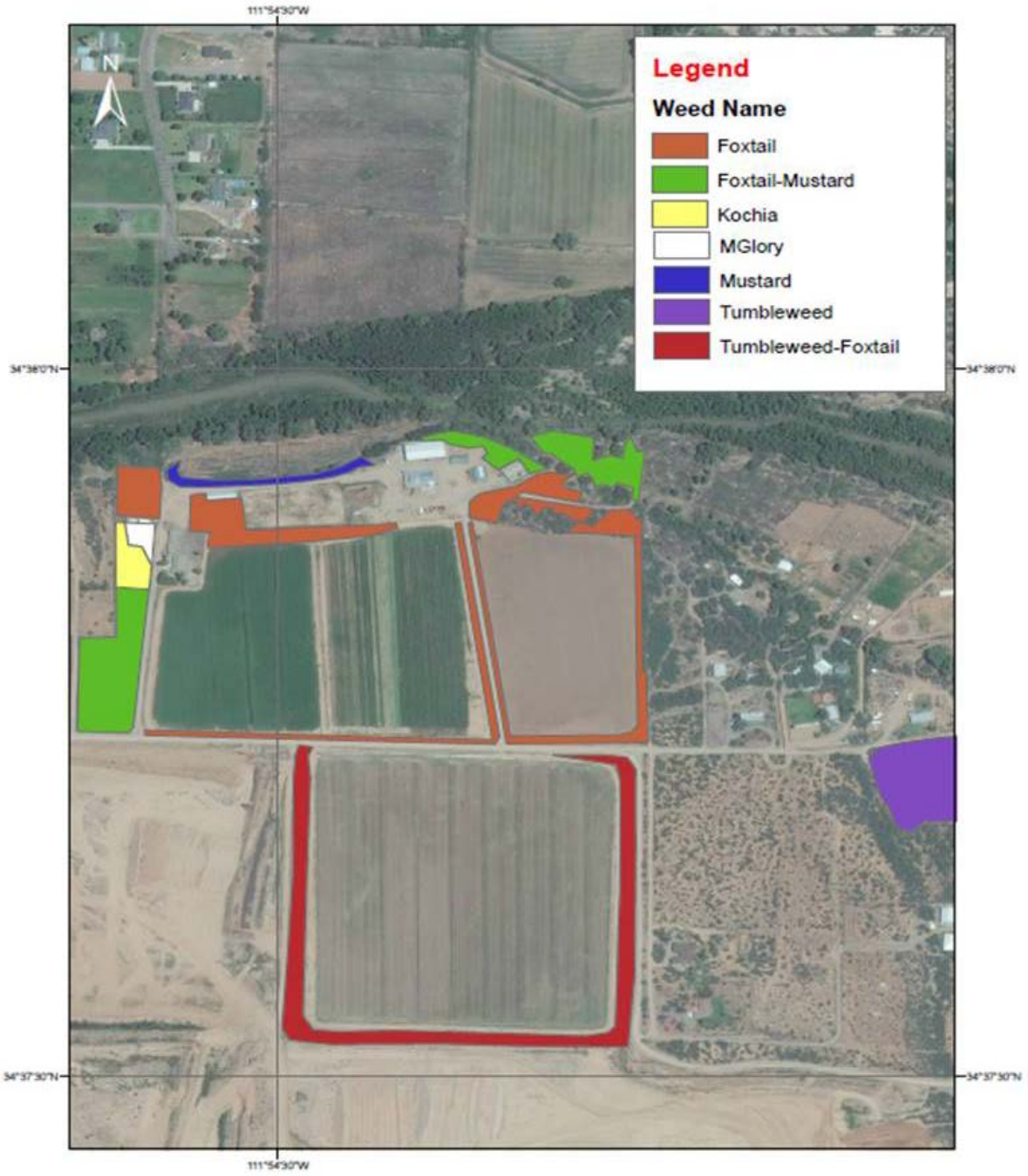
- The location of various species.
- How large in area is the infestation.

Mapping of invasive weeds helps:

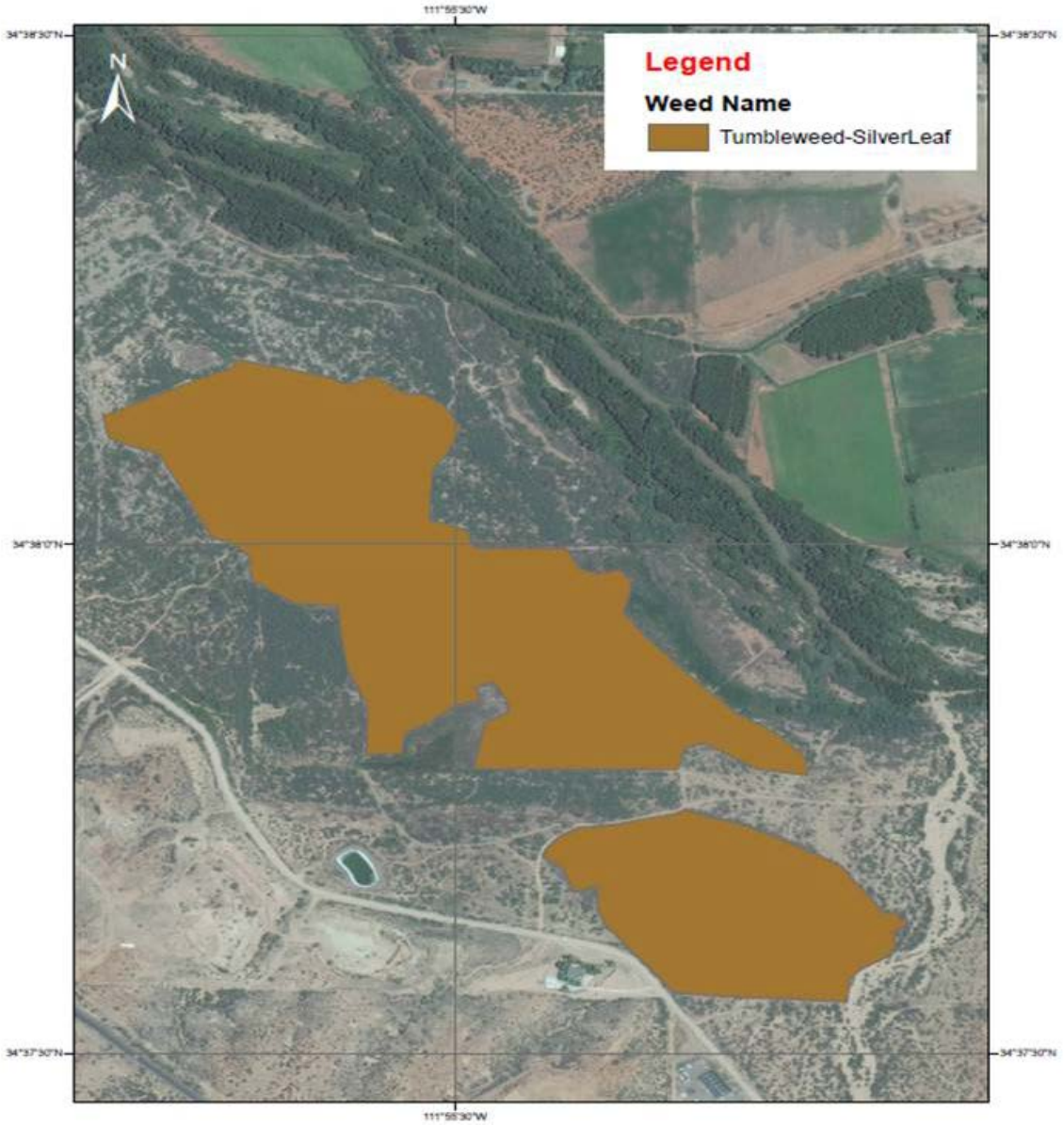
- Determining weed-free areas which are susceptible to future invasion.
- Provides a watch list of rapidly spreading plants to managers for early detection and response.



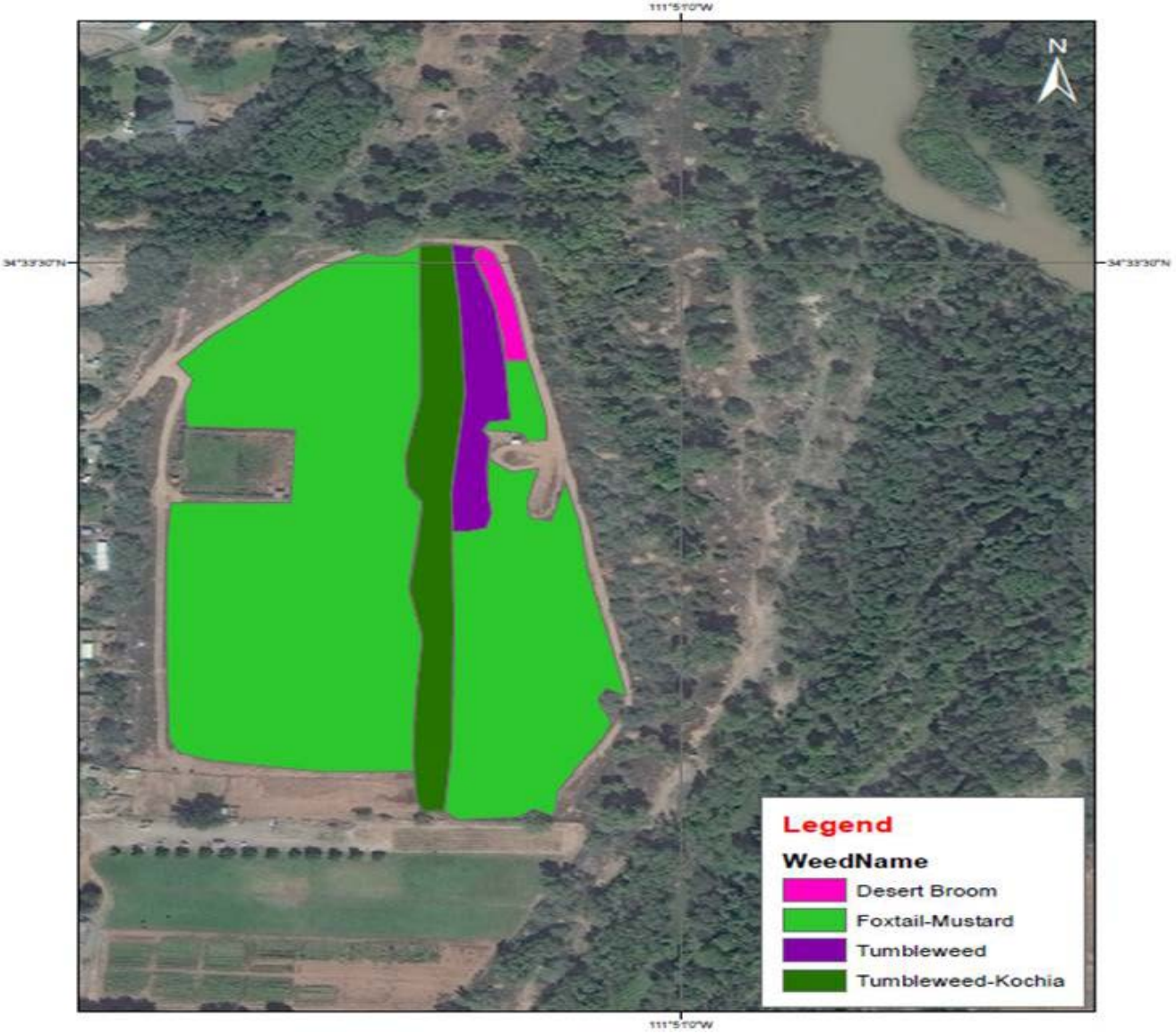
Mapping over successive years is also utilized to measure treatment success while improving continuity of control strategies over the long-term.



Tumbleweed-Silver leaf nightshade invasion at Upper Clover Leaf



Foxtail-Mustard invasion at the Camp Verde Field



GIS mapping allowed calculating the total area of Weeds Invasion at Clover Leaf Ranch

Weed Name	Acres
Tumbleweed-SilverLeaf	94.63
Tumbleweed-Foxtail	41.25
Desert Broom	37.54
Foxtail	25.92
Foxtail-Mustard	15.26
Tumbleweed-Kochia	13.15
Kochia	12.78
Tumbleweed	4.29
Mustard	3.66
Morning Glory	3.12
Kochia-Mustard	2.53
Mustard-Silverleaf	1.36
Tumbleweed-Mustard	0.94

Acknowledgements

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