

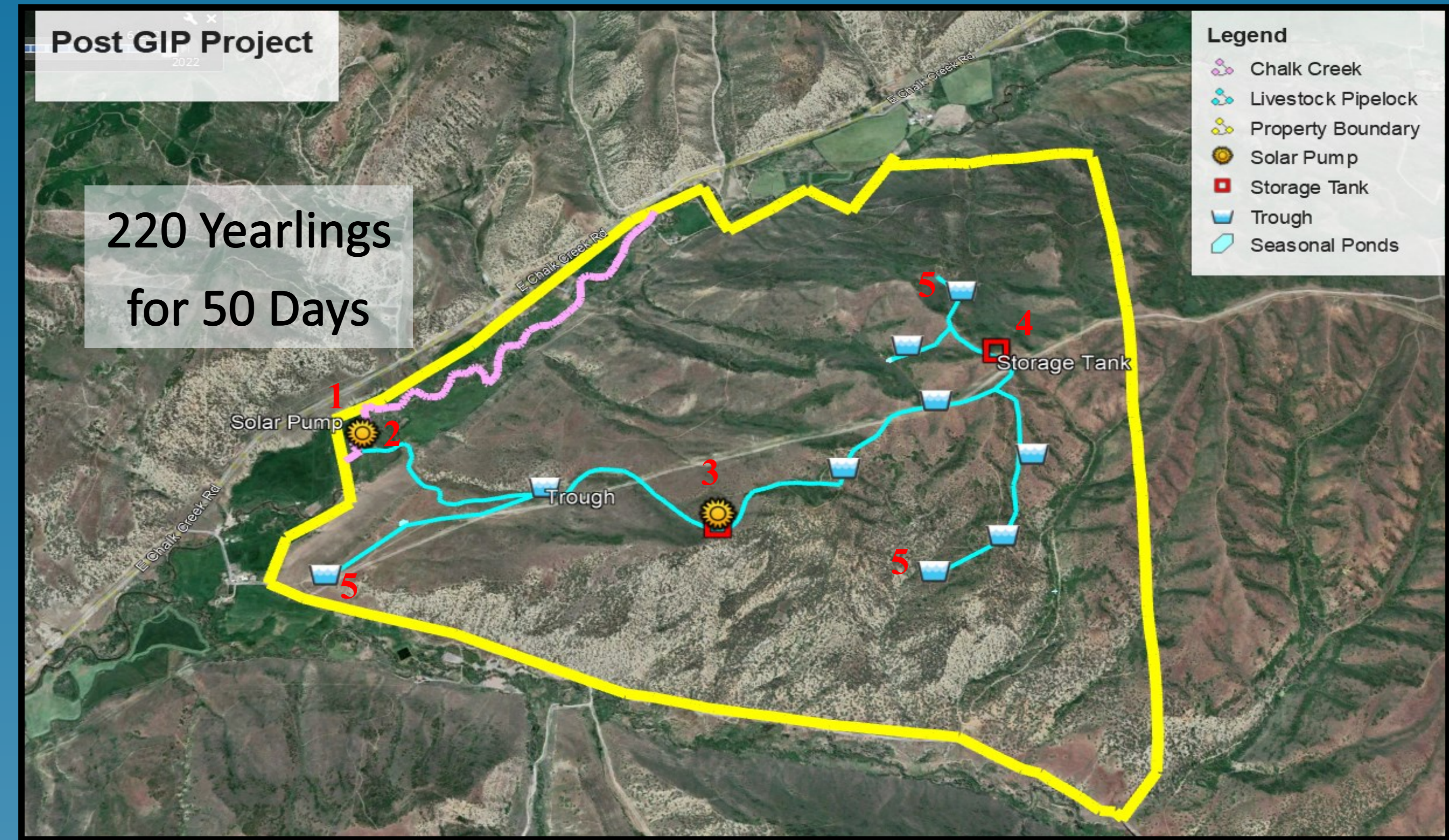
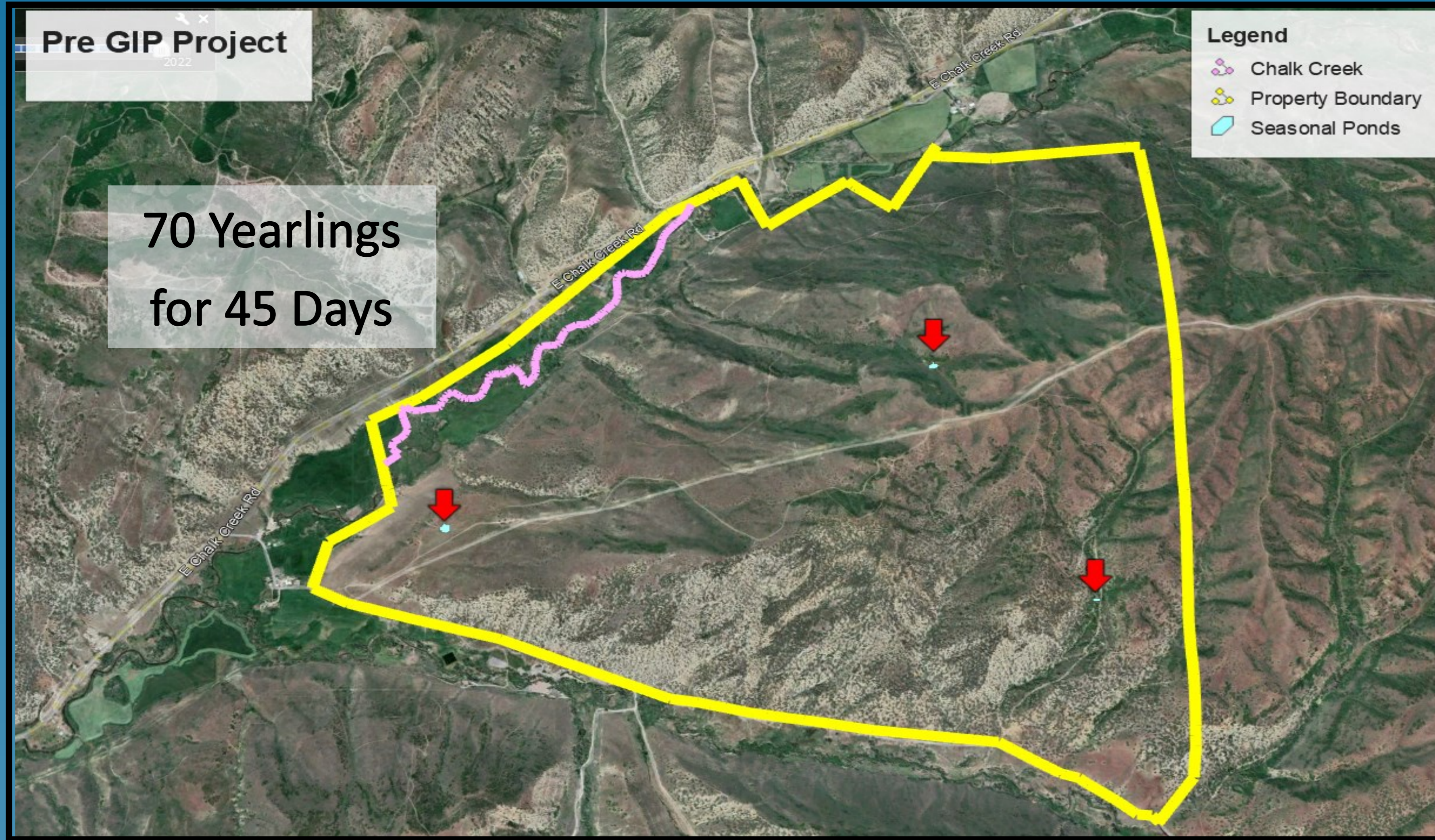


# USING SOLAR TECHNOLOGY TO INCREASE GRAZING MANAGEMENT FLEXIBILITY ON RANGELANDS

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Before

After



## Solar Development

#s are associated to map and picture locations

- 1- A shallow well was developed adjacent to Chalk Creek 60 ft deep
- 2- A 8 panel solar pump system was installed
- 3- Using HDPE pipe, the water is pumped from the well 350 vertical feet along 1.25 miles to (3) 1,700 gallon storage tanks at the second solar location
- 4- From the second solar location, water is pumped another 1.10 miles with an elevation increase of 350 ft to a second set of (3) 1,700 gallon storage tanks on top of the ridge
- 5- From the top storage tanks, (7) 800 gallon aluminum and (2) 1,100 gallon tire troughs are gravity fed

\* This water system is considered a closed system, meaning floats are used on tanks and troughs, once they are full the valves shut off and the water remains in the source location. (1)

## Ecological Impacts

Prior to the water development project:

- \* Animals were limited on grazing time and location due to water availability.
- \* Riparian areas were the main water source and heavily grazed.

Increasing water locations for livestock allows for greater management flexibility in the time, timing and intensity of grazing.

\* **Time– How long is it grazed?**– Prior to the improvements there were only 3-4 water locations that the cattle could use for the 45 days, which results in increased grazing pressure around those areas. By adding more water locations the amount of time a cow spends in any one area decreases, the cattle can more evenly distribute across the landscape which also reduces grazing pressure along the sensitive riparian areas.

\* **Timing– When it is grazed?**–The water system added flexibility in the time of year this pasture can be grazed. Before it was limited to spring grazing only, when the ponds had water. It can now be grazed from May to November and can change the time of year it is used for those 50 days.

\* **Intensity– How much forage is removed?**– With increased cattle numbers our grazing intensity increases, but with increased water locations and the ability to distribute cattle more uniformly across the landscape, animals stay in one location for a shorter duration before being moved and the plants are able to have a longer recovery period.

## Economic Impacts

This project was designed and completed with partnership from the Utah Department of Agriculture and Food's Grazing Improvement Project (GIP). GIP provides a cost share grant to help alleviate costs of grazing and rangeland improvements.

Operations Before and After Water Development

	Before	After
Head	70	220
Days	45	50
\$ per day*	0.67	0.67
AUM	105	367.4
Income	\$2,110.50	\$7,370.00

\* Cost Per Day is based off a custom grazing charge of \$20/head/month

Increasing water availability allowed for greater forage utilization and increased stocking rates by 3.5 times.



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