

# Determining soil moisture triggers for aerobic rice under automated irrigation



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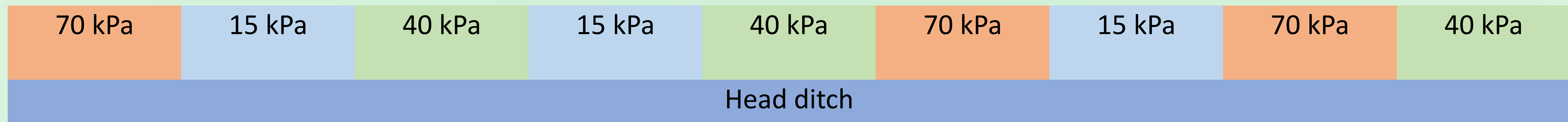
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## Objectives:

- Determine optimum soil moisture tension to trigger irrigation in aerobic rice to maximise water productivity
- Implement a fully automated irrigation system to enable ease of irrigation under aerobic rice system
- Determine if aerobic rice is a possibility for commercial growers in water constrained seasons

## Aerobic Rice Site Layout – 34 ha, 9 bay border check, 3 treatments replicated 3 times

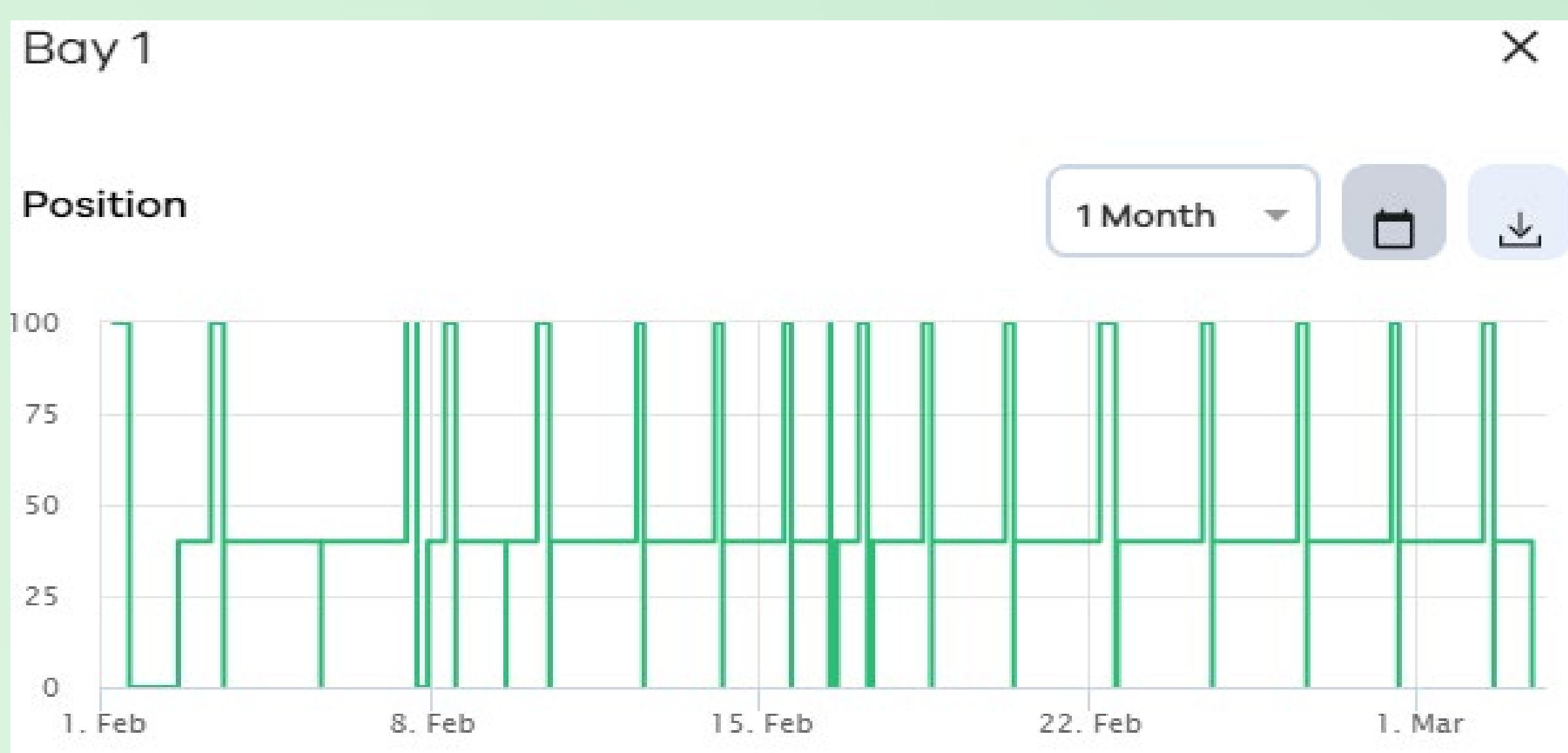


## Irrigation Management: 3 irrigation treatments under investigation

All treatments same				Triggered flushing based on soil moistures	Continuous flushing (every 2-3days, <10kpa)
Viand drilled in hay stubble	1 <sup>st</sup> flush	2 <sup>nd</sup> flush	3 <sup>rd</sup> flush	Early tiller - PI	PI - Flowering
7/11/20	10/11/20	20/11/20	3/12/20	17/12/20 - 17/1/21	21/1/21 – Mid March 19 flushes as at 3/3/21

## Manual irrigation

- 1<sup>st</sup> Irrigation: Over 4 days the farmer drove to the field and back 12 times to check or change water (including a 5:00am, 4:00am and 1:00 am water change)
- This totalled 7 hrs of labour and 168km's travelled
- 7 hrs X \$45/hr + 168 km X \$0.72/km = **\$436** plus sleep deprivation and missed opportunities doing other jobs, e.g. spraying, housework or fishing



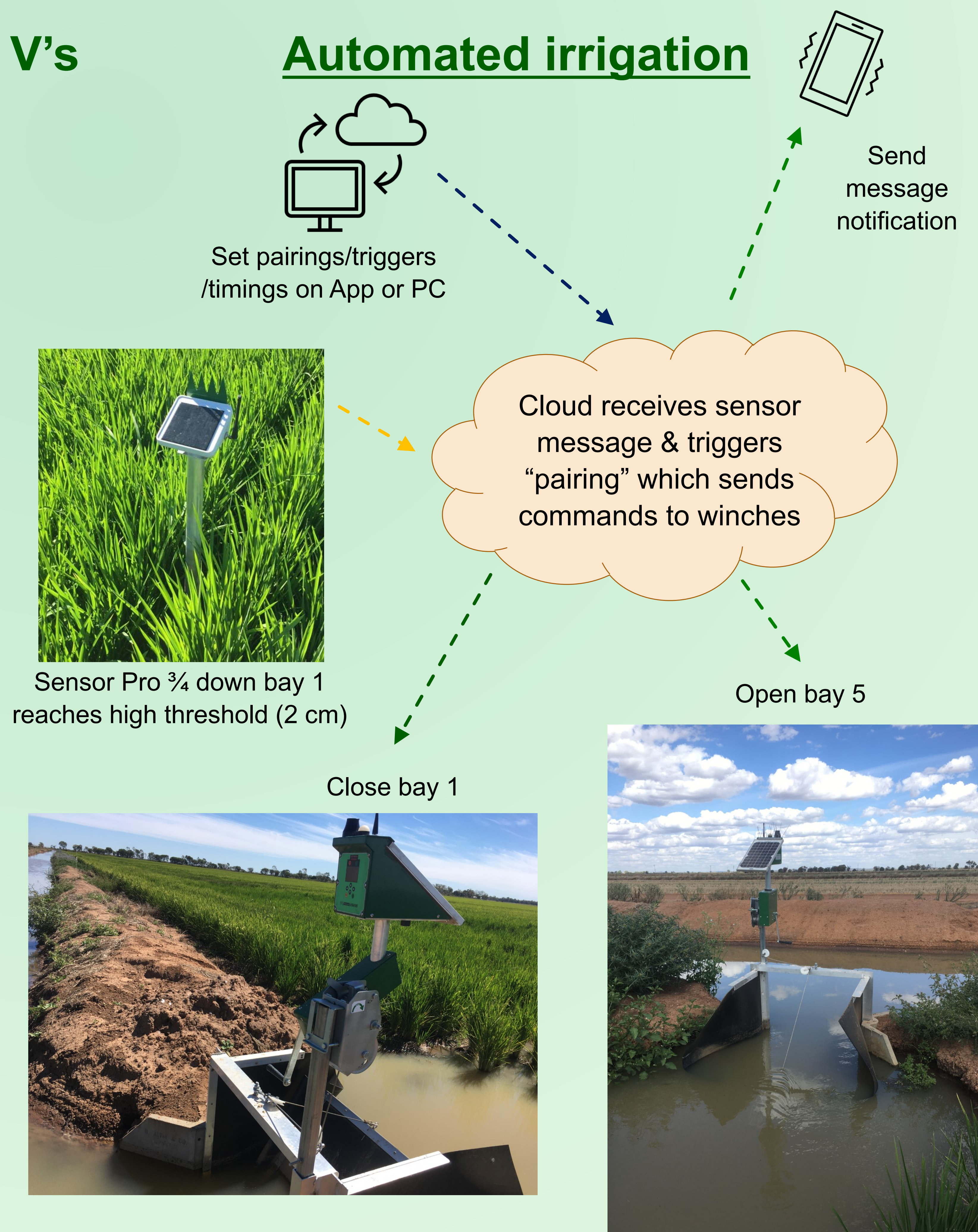
Bay 1 auto winch positions: 17 irrigations in February

## Findings to date

- Aerobic rice irrigation is possible at a commercial level with automated irrigation scheduling
- Weed control successfully achieved in commercial aerobic rice trial
- Maturity delayed 10-14 days in 70 kPa vs 15 kPa treatment
- Establishment affected by stubble windrows – taller stubble = earlier growth due to wind protection

## V's

## Automated irrigation



Australian Government  
Department of Agriculture



AgriFutures  
Rice

