


The Value of Winter Stubble to Optimize Production of Irrigated Pastures

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Fall Defoliation
Height of
Perennial
Grasses



Research Questions:

- 1) Does residual winter stubble affect the following season growth and production of intermountain irrigated pastures? Does higher stubble result in more spring/summer production?**
- 2) If so, does the increase in spring/summer production off-set the amount of fall-forage that is not utilized?**
- 3) Is there a cumulative effect over-time? Will sites that are persistently clipped close in fall/winter eventually show a negative effect in production?**

Why does (or might) winter stubble matter?

- **Potentially available carbs *might* be mobilized from stubble to fuel rapid tiller initiation in spring resulting in earlier/faster regrowth.**
- **More stubble in the fall *might* result in more tiller bud development in the fall.**
- **There *might* be a physical effect of buffering soil temperature and moisture**
- **Very little research exists quantifying any of these effects**

Strips of timothy, orchardgrass, and tall fescue planted in 4 reps at Intermountain Research and Extension Center (Tulelake, CA)



Agronomic Practices

- Irrigation to meet demand by estimated by ET
- Meadow mice and spot weed control
- Fertilizer @ 100#N in spring and 40#N monthly through summer



6 Clipping Treatments

- 0.5" fall harvest height
- 2" fall harvest height
- 4" fall harvest height
- 6" fall harvest height
- 4" harvest w/ mid winter clip
- 4" harvest w/ mid winter burn

Fall Clip in Mid-October

Winter Clip or Burn in Late January

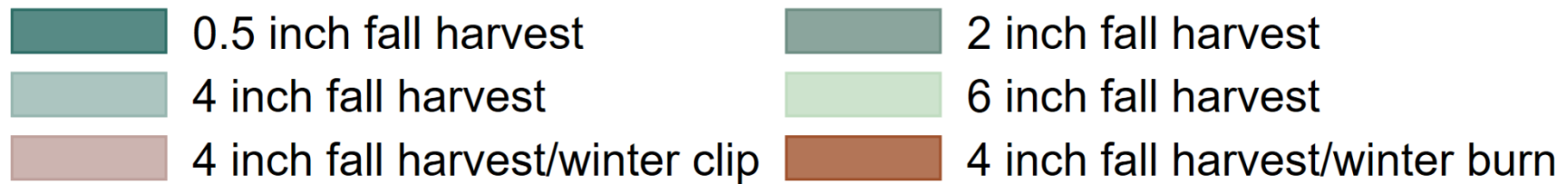
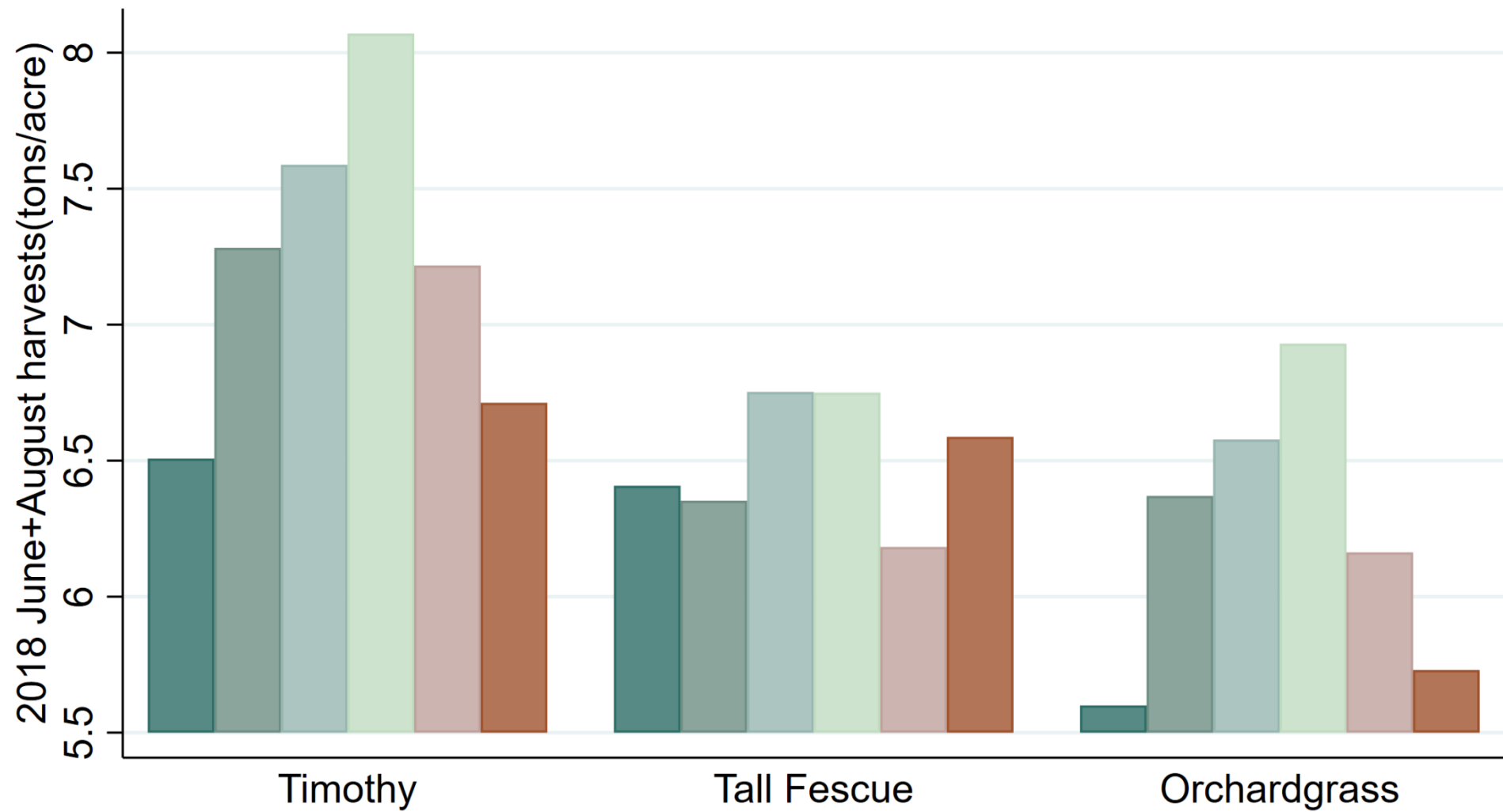
Initial Fall/Winter treatments applied in 2015, and project continued for 3 growing seasons - 2016, '17, and '18.

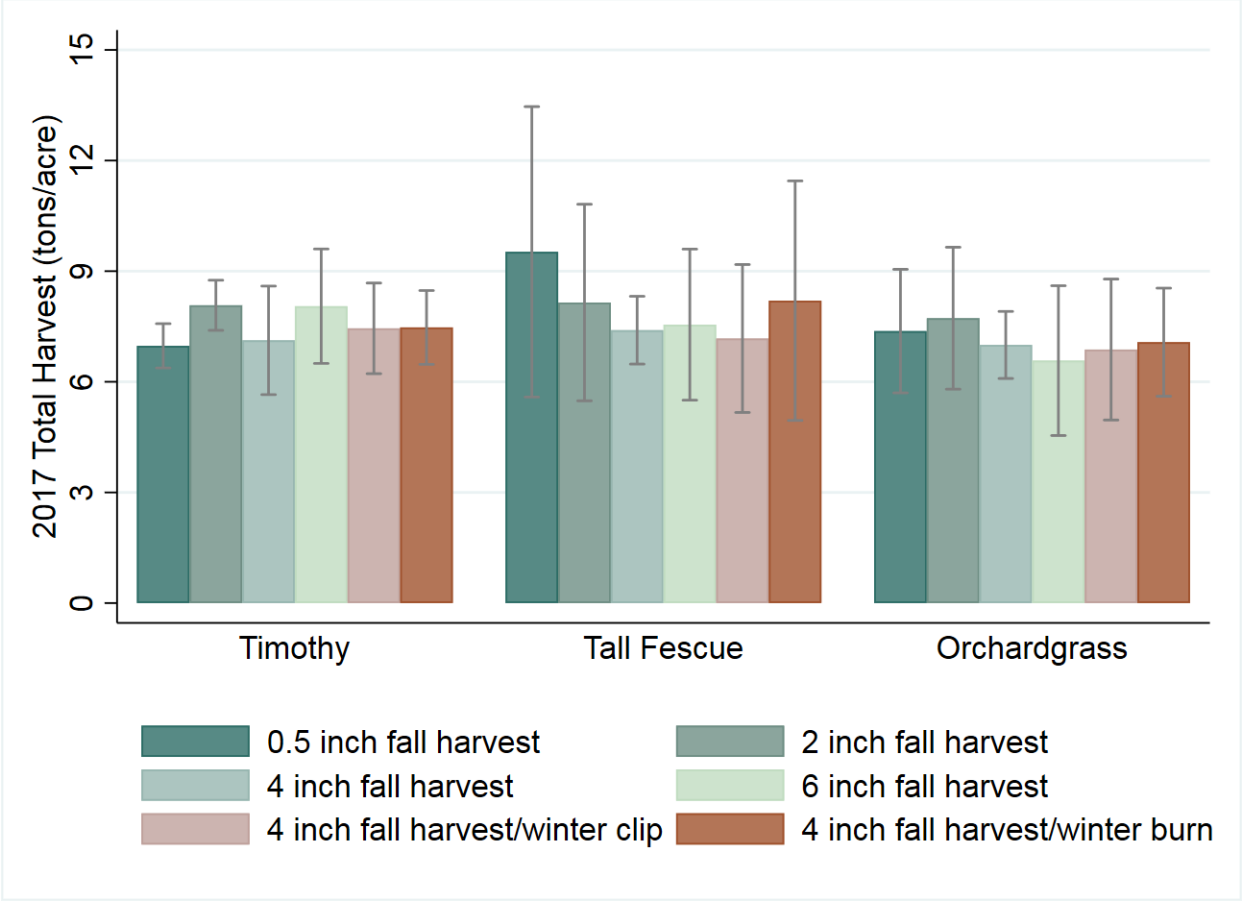
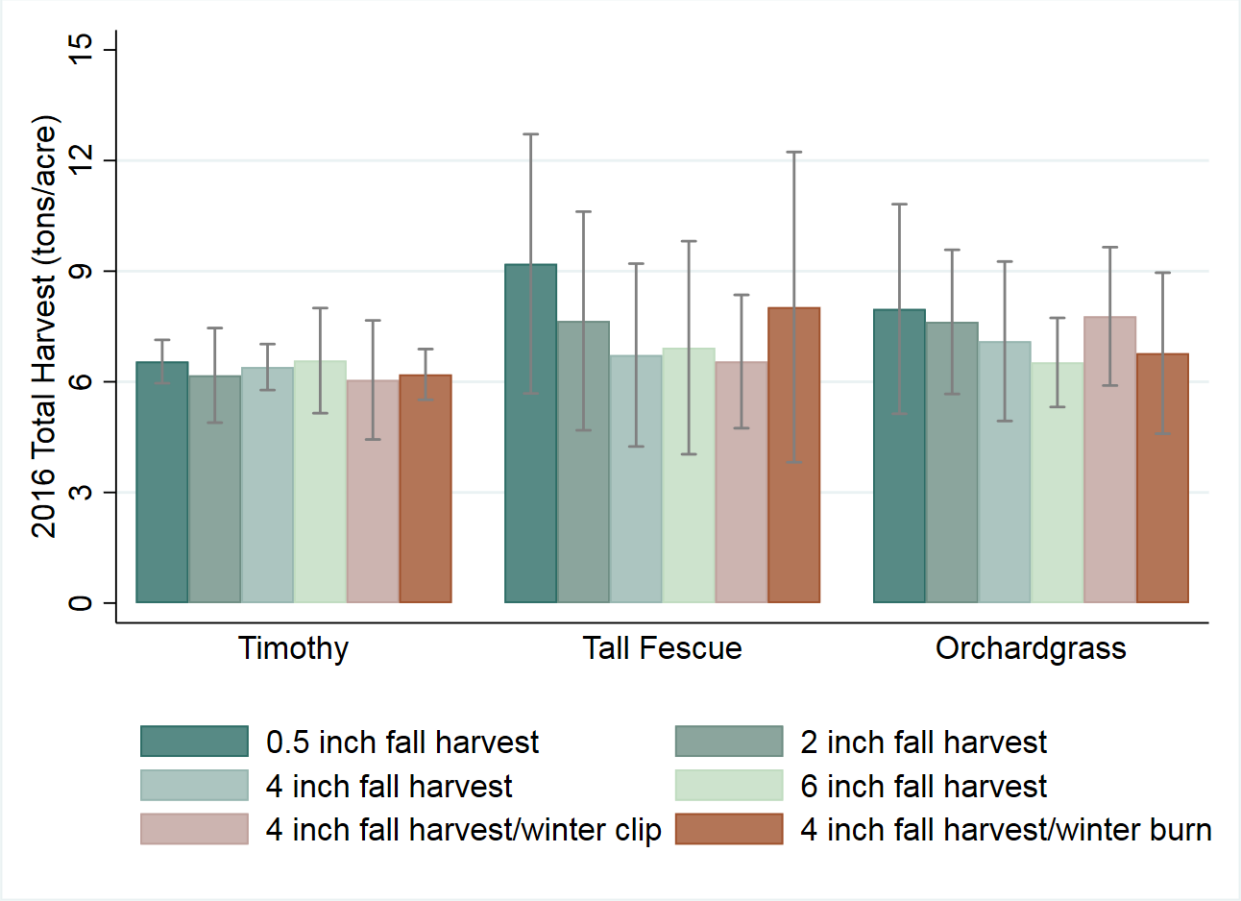


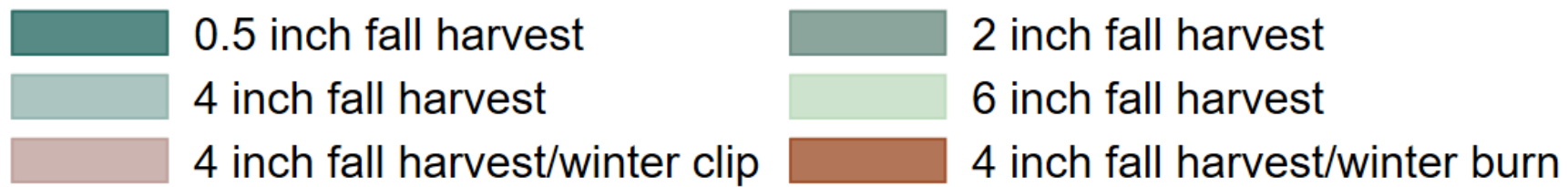
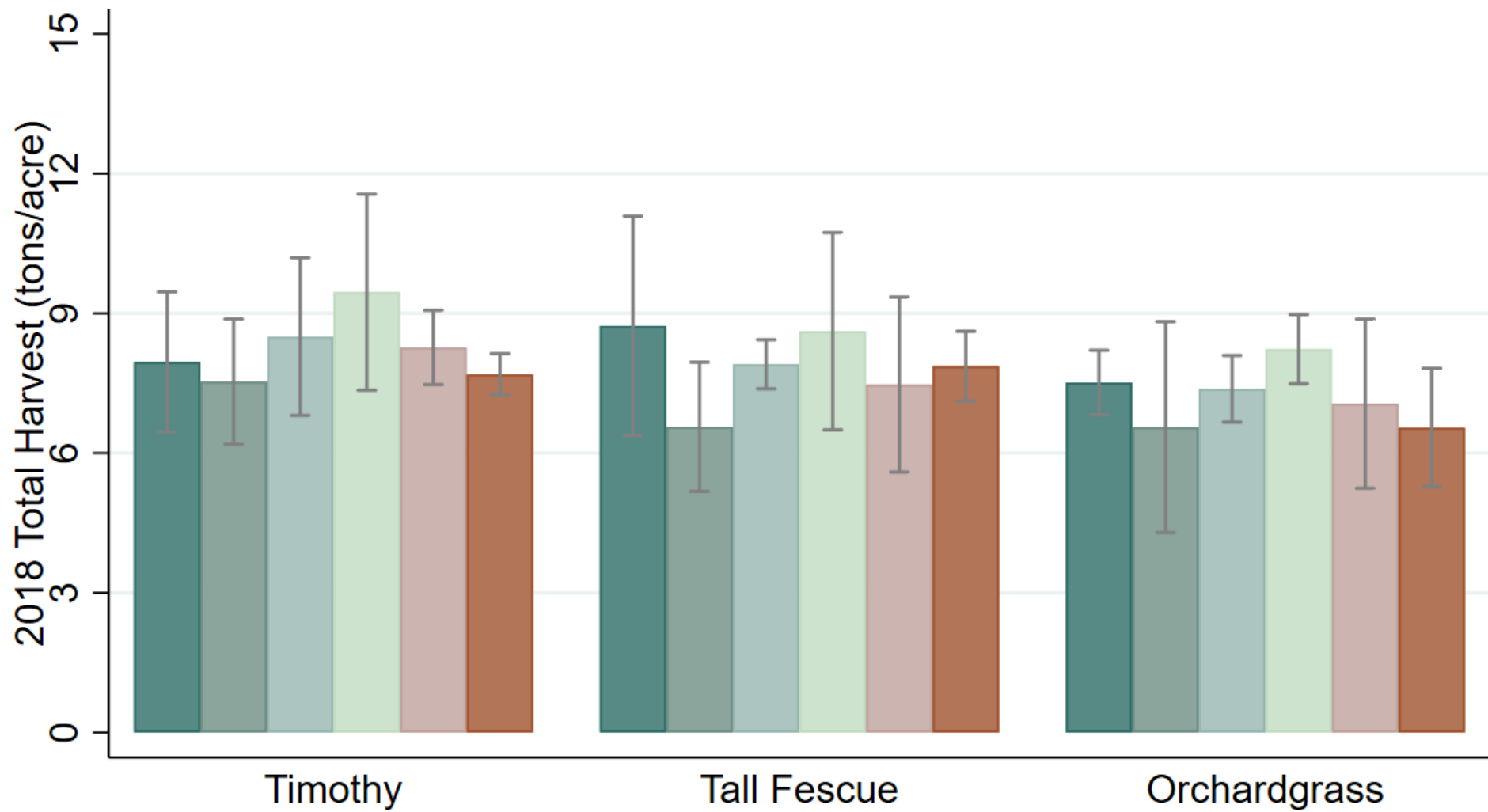
All plots were harvested 3 times per year

- June cut to 4"
 - August cut to 4"
 - October cut to fall treatment height
 - January/February winter clip to 2" or burn
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- All harvest is reported in pounds of dry matter per acre









Key Findings

- In general, there is a modest spring/summer boost in production from fields with higher winter stubble, with Timothy and orchardgrass being more responsive than tall fescue
- In many cases the spring/summer increase *doesn't* completely offset the forage you would give up in the fall to achieve the higher stubble.
- In the short term the tighter you graze, the more you can harvest and there is not an *immediate* penalty the following year. *Other impacts associated with heavy grazing not captured.*
- After 3 years, it appears that higher levels of stubble might begin to pay-off

Questions?

