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Holistic Management and Regenerative Agriculture

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Hawkins's 2017 Meta Analysis of Holistic Planned Grazing Should be Retracted

In most fields of science, it is common sense that in order to conclude a method doesn't work you should actually test *that specific method*.

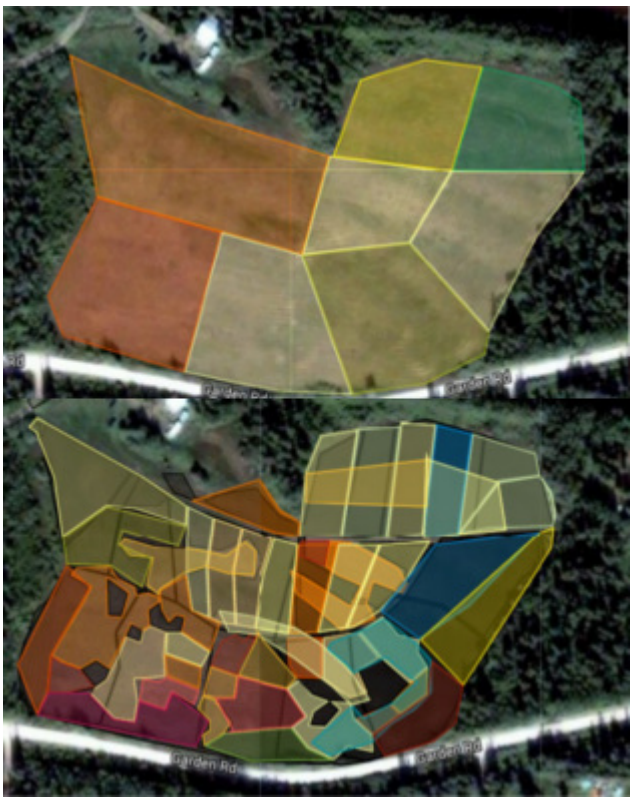
For example, if you are trying to determine if Newton's laws are accurate, you'd better test Newton's Laws as he himself described them in his books, or else you'd better not claim to be studying Newton's Laws.

What would the reaction be to a study on the effectiveness of "chemotherapy", for example, that actually just studied the effects of giving cancer patients random poisons? From a certain perspective it makes sense — chemotherapy drugs can be thought of as poisons — but clearly there is a distinction between chemo-drugs and other poisons that matters! So why is it that range scientists can presume to make conclusions about Holistic Planned Grazing, seemingly without loss of professional reputation, by studying rotational grazing systems that have only the most superficial similarity to HPG (in the same way that chemo drugs have superficial similarity to poisons)?

In this article I will be examining the recent paper "A global assessment of Holistic Planned Grazing™ compared with season-long, continuous grazing: meta-analysis findings" by Heidi-Jayne Hawkins. My critique her paper applies equally to the many other range scientists claiming to have debunked Allan Savory's methods while drawing on data completely unrelated to Savory's work as evidence against him. (Briske et al. 2014; Briske et al 2013; Briske et al 2008; Briske et al. 2011; Carter et al. 2014; Holechek et al. 1999).

Since no one who peer-reviewed Hawkins's paper seems to have caught the glaring errors in her meta-review, and no one else in the academic world has yet publicly spoken out

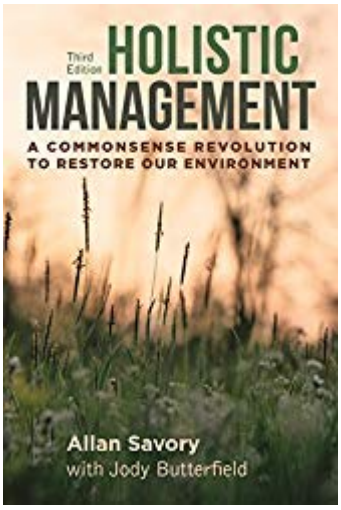
against this meta-review, it is apparent that there must be a widespread fundamental misunderstanding of what the term "Holistic Planned Grazing" refers to.



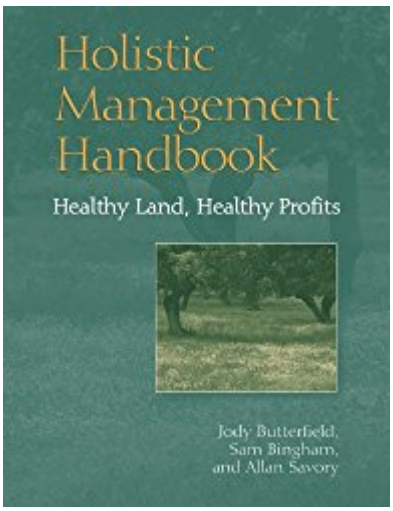
What exactly is Holistic Planned Grazing?

Holistic Planned Grazing (HPG) is a specific grazing methodology developed over several decades by Allan Savory and his collaborators. HPG has gone through several iterations throughout the years as flaws in the process were revealed and subsequently fixed. **The current version of HPG is detailed in the "Holistic Management Handbook: Healthy Land, Healthy Profits" (referred to as the "HM Handbook" from now on) and the "holistic decision making" aspect of HPG is laid out in the HM Textbook (the most recent version is called "Holistic Management: A Commonsense Revolution to Restore Our Environment")**.

The version of HPG presented in these two books is the version of HPG which most managers are using right now, and which is advocated by the two major HPG promotional organizations; the Savory Institute and Holistic Management International.



Hawkins claims in her paper that *'If adaptive management is used, there is little to distinguish HPG from other rotational, high-density, time-controlled grazing approaches such as short-duration high-intensity grazing, intensive rotational grazing, cell grazing, and strip grazing."* (Hawkins 2017) This statement is false, as anyone who is familiar with the grazing approaches in question should immediately realize. There are many, many aspects to Holistic Planned Grazing which are found nowhere else. Sure, there are many other grazing approaches which have *superficial* similarities to HPG (animals are high density, and moved between many paddocks frequently, for example), but, as in the case of the chemo vs poison example I gave above, there are *details* unique to HPG which make all the difference!



The HM Handbook is not at all ambiguous about the methodology of HPG. You should read the foundational texts yourself, as I cannot adequately describe the process in this short article. But, for reference, here are a few key aspects which define HPG:

- **First, a Holistic Context is developed to guide all decision making**. The Holistic Context is constantly consulted throughout the creation of the grazing plan and during the actual implementation of HPG on the ground. Holistic management is *not* a synonym for "adaptive", which is clear if you read the HM Textbook. (Savory and Butterfield 1998)
- Recovery periods (a.k.a. rest periods) are critical variables in HPG, and are carefully determined based on the specifics of each Holistic Context and the ecological understanding presented in the HM Textbook. A minimum recovery period is used when growth is at its fastest, and a maximum recovery period is used when growth is at its slowest (when growth stops the entire grazing methodology changes, this range of recovery periods is only meant for use within the growing season). **A guideline given in the HM Handbook is that plants are ready to be grazed again "when [they] look like ungrazed plants growing nearby",** but advice is also given about when you would want to lengthen that period or shorten it based on your Holistic Context. (Butterfield et al. 2006)
- Different advice is given for different climates. Climates are broadly classified into "brittle" and "non-brittle". **In brittle-environments it is made clear that "herd effect" (" the result of a change in animal behavior… usually brought about by some actual management action – using an attractant, or crowding animals to ultra-high density**.") **is of paramount importance for successful regeneration or sustainability of pastures. Herd effect is still a useful tool in non-brittle environments, but not as strictly required for success as it is in brittle environments.** (Butterfield et al. 2006; Savory and Butterfield 1998)
- **In all environments the use of fire is heavily discouraged**, with an entire chapter devoted to it, detailing why it is almost never the right tool to use, in the HM Textbook. (Savory and Butterfield 1998)
- Two different grazing methodologies are given in the HM Handbook: one to be used during the dormant season (called a "closed plan"), and one to be used during the growing season (called an "open plan"). (Butterfield et al. 2006)
- **HPG *always* involves planning the season's moves on something called a "grazing plan & control chart". This planning is done according to a very clear 17-step process, which can be found *only* in the HM Handbook.** This planning process primarily centers around ensuring that your chosen recovery periods are maintained for all paddocks, but it also includes many other variables in the planning of herd movements (ex: birthing and breeding periods, labour considerations, livestock health, wildlife habitat considerations, crop field needs, etc.) and, depending on the Holistic Context, these other variables may

take precedence over maintaining your rest period. (Butterfield et al. 2006)

- HPG does not end with the creation of the grazing plan on the chart; after the plan is implemented there is continual monitoring, and adaption involved which are essential to success with HPG. The two most common things which are monitored and changed throughout the growing season are stocking rate and rest period (which determines grazing period). **The HM Handbook gives specific indicators to determine if stocking rate or rest periods need to be adjusted.** In the academic range science literature, this practice of adjusting stocking rates and/or rest periods throughout the season is usually referred to as "Adaptive Grazing". HPG is always adaptive grazing, but adaptive grazing is *not* always HPG. (Butterfield et al. 2006)

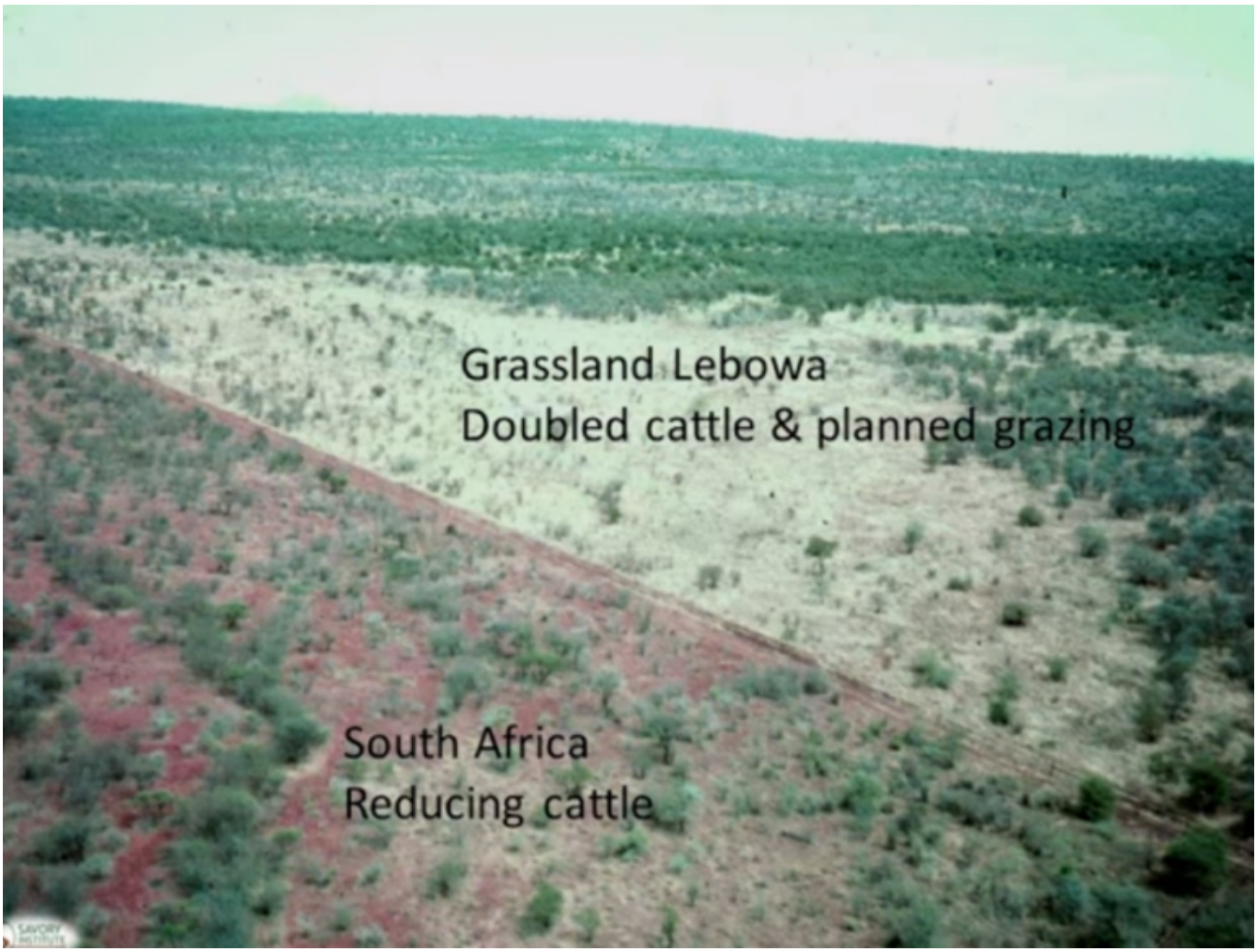
  Now that we better understand what HPG is (a highly specific set of recommendations and processes detailed in the HM Handbook and HM Textbook), lets turn our attention to Heidi-Jayne Hawkins's meta-review:

  She analysed twenty-three studies from around the world and found that HPG has no benefit over Continuous Grazing in terms of animal and plant production (Hawkins 2017). Since her study is very specifically about "Holistic Planned Grazing ™", we would expect that the studies analysed in her meta-analysis would be actual studies of "Holistic Planned Grazing™". This is, alarmingly, not the case at all!

  **Please note, I was not able to find an online copy of 'Gammon and Roberts 1978". This study was published 10 years before the earliest version of Allan Savory's Holistic*

Management, so, barring the use of a time machine, it is impossible for this study to have been studying the specific approach referred to as 'Holistic Planned Grazing".

**Also note, the study 'Clatworthy 1984" is a reference to the 'Charter Grazing Trials" in Zimbabwe which were personally overseen by Allan Savory. This occurred before he had developed the modern versions of Holistic Management or Holistic Planned Grazing, but because it was overseen by Savory himself, we are going to treat it as a completely legitimate study of 'Holistic Planned Grazing" which he created.*



Are they studying HPG, or something else?

Let's compare the grazing methodologies used in the twenty one remaining studies (see the notes above about the other two studies) with Holistic Planned Grazing:

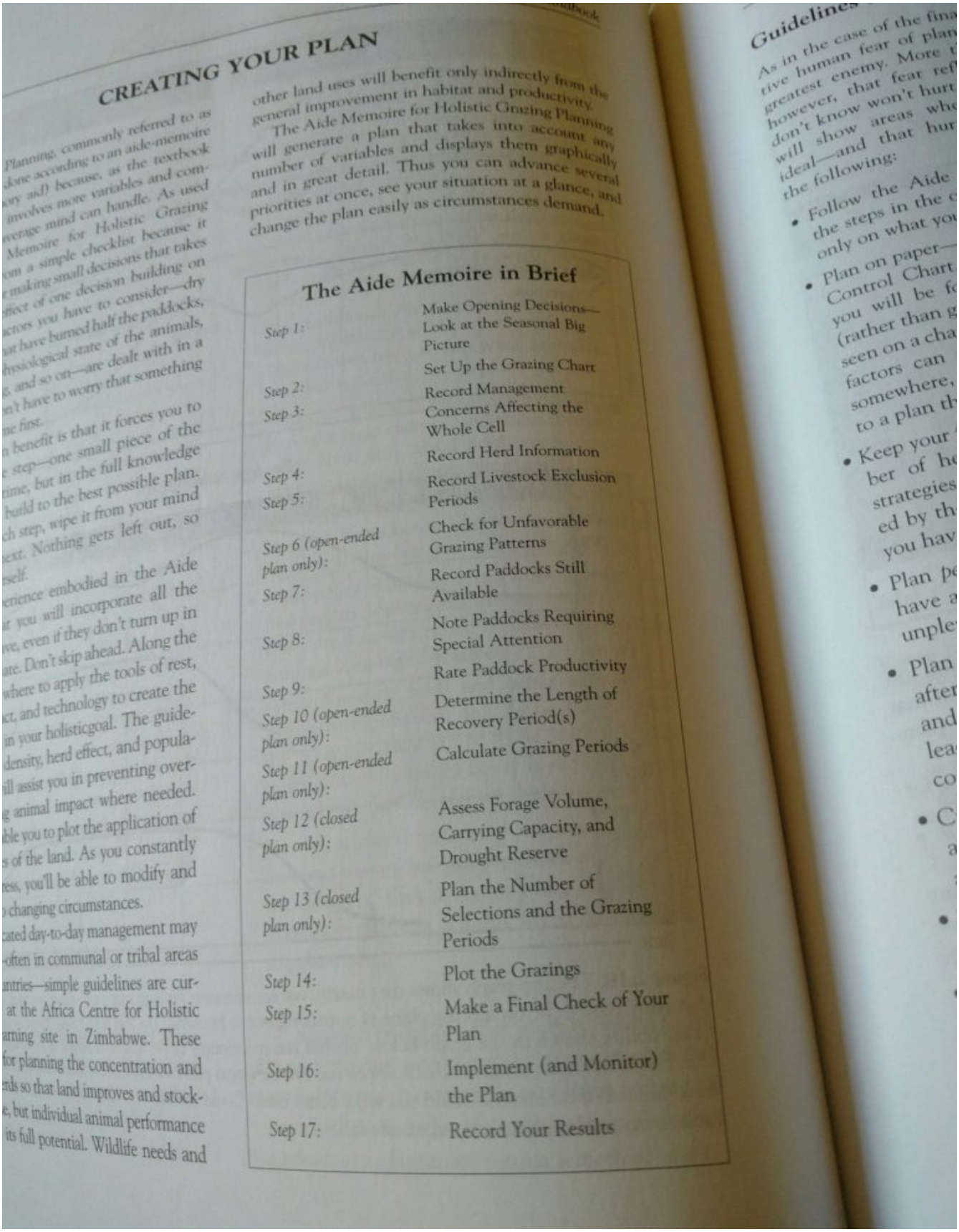
1. **Was a Holistic Context developed and used to guide the grazing management?**

Since the development of Holistic Management, Allan Savory has been consistent: *grazing management cannot be divorced from the holistic context, or holistic decision making, without negative consequences.* This point is heavily reinforced in all official HPG/HM courses and literature. (Butterfield et al. 2006; Savory and Butterfield 1998)

Out of the twenty one studies, *none* mention that a "Holistic Context" or "Holistic Management" or "Holistic Decision Making" or anything similar to these concepts were at all involved in the grazing management. This makes them, at best, studies of "Planned Grazing" not "*Holistic* Planned Grazing".

2. **Was the grazing planned on a "Grazing Plan & Control Chart" according to the 17-step process from the HM Handbook?**

   Not a single study in the meta-review mentions "Holistic Management Handbook", nor the "grazing plan & control chart" nor anything about the 17 steps to creating a grazing plan with HPG. So not only are the grazing methodologies used not "holistic" they are also not even "planned grazing"!



CREATING YOUR PLAN

Planning, commonly referred to as
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Memoire for Holistic Grazing
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its full potential. Wildlife needs and
other land uses will benefit only indirectly from the general improvement in habitat and productivity.

The Aide Memoire for Holistic Grazing Planning will generate a plan that takes into account any number of variables and displays them graphically and in great detail. Thus you can advance several priorities at once, see your situation at a glance, and change the plan easily as circumstances demand.

The Aide Memoire in Brief

Step 1:	Make Opening Decisions—Look at the Seasonal Big Picture
	Set Up the Grazing Chart
Step 2:	Record Management Concerns Affecting the Whole Cell
Step 3:	Record Herd Information
Step 4:	Record Livestock Exclusion Periods
Step 5:	Check for Unfavorable Grazing Patterns
Step 6 (open-ended plan only):	Record Paddocks Still Available
Step 7:	Note Paddocks Requiring Special Attention
Step 8:	Rate Paddock Productivity
Step 9:	Determine the Length of Recovery Period(s)
Step 10 (open-ended plan only):	Calculate Grazing Periods
Step 11 (open-ended plan only):	Assess Forage Volume, Carrying Capacity, and Drought Reserve
Step 12 (closed plan only):	Plan the Number of Selections and the Grazing Periods
Step 13 (closed plan only):	Plot the Grazings
Step 14:	Make a Final Check of Your Plan
Step 15:	Implement (and Monitor) the Plan
Step 16:	Record Your Results
Step 17:	

Guidelines

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An overview of the 17-step grazing planning process from the HM Handbook (Butterfield et al. 2006).

Grounds for retraction

At this point we can already say without reservation that Hawkins's supposed meta-review of "Holistic Planned Grazing" was nothing of the sort, and therefore her conclusion that "Holistic Planned Grazing does not improve production" is unfounded, and the paper should be retracted.

Digging Deeper:

Let's go easy on Hawkins; lets relax our definition of HPG a bit, and see whether the studies she assessed use grazing methodologies that are at least *close* to HPG…

There are seven simple questions we can ask to determine how close the grazing methodologies used in each of the studies were to *actual* Holistic Planned Grazing, as it is defined in the official texts and courses:

Question 1: Did any of the studies use a grazing methodology which was explicitly NOT HPG? (ie. did any have a "fatal flaw"?)

There were three studies which state explicitly a grazing methodology was used which no one could argue was HPG:

- **Anderson et al. 1988 :** '*The 10 paddocks within the rotation cell were monitored as each was being grazed. On the day preceding grazing, and each day while the heifers were grazing the paddock, visual estimates of standing crop height were made at a minimum of 10 locations in the paddock.* ***When grazing had reduced the average standing crop height by 30-35% from that estimated initially, cattle were moved to the adjacent fresh paddock"*** This means the herd movements were not based on any grazing chart, neither were they based on maintaining a certain recovery period. The movements were based on only looking at the current paddock being grazed, and how much forage had been taken from that paddock. This is not, and has never been, how HPG works. You will never find in any of the HM or HPG literature the advice to move animals based on the criteria used in the Anderson et al. study. In HPG the percentage of standing crop taken in each grazing is only monitored as an indicator of whether the stocking rate should change, it has no bearing on the timing of animal movements. (Butterfield et al. 2006; Savory and Butterfield 1998)

- **Badini et al. 2007:** This was not an actual study of real-world results with different grazing methodologies, it was a *computer simulation*. HPG was created to bring benefits in *the real world*, not a simulation which was so limited that it could not even "*simulate the effect of pasture degradation factors such as selective overgrazing and physical damage of soil and pasture due to animal activity"!* Besides the obvious limitations of using a simulation, the criteria used to determine when to move the animals was, once again, based on a threshold of biomass in the current paddock being reached. As mentioned above, this is absolutely *not* how animals are moved in HPG. (Butterfield et al. 2006; Savory and Butterfield 1998)
- **Teague et al. 2010:** Besides the heavy use of fire in this study (which is almost never a part of HPG) the movement of animals was, once again, *not* based on a grazing plan or on maintaining a certain rest period, but instead the decision to move was based on *'The Grazing Manager (TGM) optical utilization score (scale of 0 to 5) of Kothmann and Hinnant (1999)".* This is an entirely different methodology than HPG. (Butterfield et al. 2006; Savory and Butterfield 1998)

…. Now we are down to 18 studies. Four studies, out of the original twenty three, have been shown to be not even remotely studies of 'Holistic Planned Grazing™", and one has been confirmed as a legitimate study of HPG.

Question 2: Did any of the studies implement anything remotely resembling a Holistic Context/Holistic Decision Making?

None of the papers mentioned anything resembling a Holistic Context, Holistic Management or Holistic Decision Making *except for Teague et al. 2011* which says "They plan their grazing management within an adaptive, goal-oriented management framework using basic knowledge of plant and animal physiology and ecology" in reference to those using planned rotational grazing. Presumably, if they were testing this same method in their study they would have also used an "adaptive, goal-oriented management framework", although there is no confirmation of this or further mention of it in the paper.

Question 3: If they didn't use a "Grazing Plan & Control Chart" or the 17-step grazing planning process, did they at least plan the grazing on some sort of chart and/or in a way that ensured full recovery for each pasture before the next grazing?

None of the papers make any reference to planning the grazing on any sort of chart. However, in email correspondence with the author, I discovered that "Badgery et al. 2017a,2017b" did utilize a grazing chart (although it was not the same type of chart used

in HPG). Also in "Dowling et al. 2005" *'The paddocks within the 'cell' were managed according to the rules established for time-control grazing (all cooperating managers had completed a common time-control grazing training course)"* so I will assume they *did* use some sort of grazing chart, since that is a typical component of time controlled grazing courses.

As for basing the movement schedule primarily on ensuring full recovery for the plants before they are re-grazed (a key part of HPG's planning process):

- Six of the studies gave no indication of how the grazing schedule was created (Derner and Hart, 2007; Heidschmidt, 1982; Jacobo et al, 2006; Thurow et al. 1988; Vermiere et al. 2008; White et al. 1991)
- Five of the studies did *not* base the grazing schedule primarily on ensuring adequate recovery for the plants, these were all studies of the same grazing experiment in Wyoming: *'The time-controlled rotation treatments were subdivided into 8 paddocks,* ***with length of grazing on each paddock determined by estimated forage availability and rate of forage growth.*** *These parameters were not actually measured, nor was any attempt made to develop mathematical guidelines, but when more forage was available or when forage growth slowed in a given paddock, steers grazed that paddock longer."* (Derner et al. 2008; Hart et al. 1988; Hart et al. 1993b; Hart et al. 1993a; Manley et al. 1997)
- Four of the studies (Badgery et al. 2017a,2017b; Dowling et al. 2005; and Teague et al. 2011) were not totally clear, but at least give me good reason to believe that they were using recovery period as a primary criteria for the grazing schedule.
- Three of the studies (Cassels et al. 1995; Gillen et al. 1998; McCollum et al. 1999), all from the same grazing experiment in Oklahoma, were clear that they *did* use recovery period as the primary variable in their grazing schedule. I received this in email correspondence with one of the authors: *'**Our planning for the rotational movement started with our target rest period.** If we wanted a 30 day rest period for the first cycle and we had 8 paddocks, the grazing period for each paddock was 30/(8-1)=4.3 or about 4 days per paddock. We did not base movement on forage remaining in the paddock or any animal indicator. We wanted any grass tillers grazed during a given grazing period to have adequate rest before cattle entered the paddock again. A given paddock was always 'moderately" grazed during a cycle. We never tried to graze down to some target stubble height or uniformity."*

Question 4: Did they monitor and modify stocking rate throughout the season to match livestock needs with the forage available (ie. was the stocking rate "adaptive")?

- Fourteen of the studies did not change stocking rate through the season based on observed forage shortages or excesses (Cassels et al. 1995; Derner and Hart 2007; Derner et al. 2008; Gillen et al. 1998; Hart et al. 1988; 1993a; 1993b; Heidschmidt et al. 1982; Jacobo et al. 2006; Manley et al 1997; McCollum et al. 1999; Thurow et al. 1988; Vermiere et al. 2008; White et al. 1991). A few of these did destock 100% occasionally during severe drought, but this is not the same as the HPG practice of closely matching livestock numbers to the needs of the land throughout the season. To be clear, HPG does not always require frequent stocking rate changes, but it DOES require the manager to constantly monitor the forage base to determine if stocking rate changes are needed. Sometimes changes are not needed for several years, but more often stocking rates will need minor adjustments more than once per year.
- Only four of the studies *did* use adaptive stocking rates (Badgery et al. 2017a,2017b; Dowling et al. 2005; Teague et al. 2011).

Question 5: Did they monitor and modify their rest period throughout the season based on the observed rates of growth in the first grazed paddock? (ie. Was the rest period "adaptive"?)

- Three of the studies do not mention whether their rest periods changed at all, or were static (Thurow et al. 1988; Vermiere et al. 2008; White et al. 1991).
- One of the studies used a fixed rest period (Derner and Hart 2007).
- The remaining thirteen studies did change their rest periods based on growth rates (Badgery et al. 2017a,2017b; Cassels et al. 1995; Derner et al. 2008; Dowling et al. 2005; Gillen et al. 1998; Hart et al. 1998,1993a,1993b; Heidschmidt et al. 1982; Jacobo et al. 2006; Manley et al. 1997; McCollum et al. 1999), but none of them say what exactly triggered the change to a different rest period, with several of them indicating these changes in the rest period were predetermined at the beginning of the season, and not based on actual observed growth in the first-grazed paddock during the current season (which is the practice advocated in the HPG methodology).

Question 6: Did they use fire, which the HPG literature makes very clear is not a good tool to use? (Savory and Butterfield 1998)

- Three of the studies mention that fire was used ("all units were burned 1 April 1990 and 20 March 1993") as a part of the management (Cassels et al. 1995; Gillen et al. 1998; and McCollum et al. 1999).

- We will assume fire was *not* used in the remaining studies since it was not mentioned.

Question 7: If the study was done in a brittle environment, did they focus on creating "herd effect" as a primary management goal? Herd effect is described in the HM Handbook as "*The impact on soils and vegetation produced by a large herd of animals in high concentration or in an exited state… the result of a change in animal behavior and usually has to be brought about by some actual management action – using an attractant, or crowding animals to ultra-high density*". (Butterfield et al. 2006)

- Out of the ten studies conducted in brittle environments (Derner and Hart, 2007; Derner et al. 2008; Hart et al. 1988,1993a,1993b; Heidschmidt et al. 1982; Manley et al. 1997; Thurow et al. 1988; Vermiere et al. 2008; White et al. 1991), none have any mention of "herd effect". Considering that it takes out-of-the-ordinary management actions to create herd effect, we can safely assume none of the studies used herd effect if they did not mention it.

Now that we have compared the grazing methodologies used in all of these studies versus the official HPG approach, let us rate the studies based on how similar the grazing management they studied was to HPG and then take another look at the results of Hawkins's meta-review in light of our new understanding…

For each of category below, studies were given a rating of 0 to 5 (5 meaning that that aspect of the grazing management was *exactly* the same as is used in HPG, and 0 meaning that that aspect of the grazing management was not even close to what is used in HPG). Where the study did not indicate what the given aspect of its grazing management looked like, the study is given a default score of 2 (although probably in most cases they should have been given a 0). Each category is given a weight multiplier, based roughly on how much importance it is given in the HM Handbook and HM Textbook. The results were color coded to show the similarity or dissimilarity to HPG.

Quantifying Similarity to Holistic Planned Grazing:

	Holistic Context (weight x 2)	**Grazing Planning** (weight x 2)	**Adaptive Stocking Rate** (weight x 0.5)	**Adaptive Rest Period** (weight x 1.5)	**Fire used?** (weight x 1)	**Herd Effect used?*** (weight x 1)	**Total Score** (out of 40)
Anderson 1988	Rotated livestock based on forage taken in current paddock. NOT at all HPG.						**0**
Badgery et al. 2017a	1	3	5	3	5	2.5	**22.5**
Badgery et al. 2017b	1	3	5	3	5	2.5	**22.5**
Badini 2007	Computer simulation, rotated livestock based on forage taken in current paddock. NOT HPG.						**0**
Cassels et al. 1995	0	3.5	0	3	0	2.5	**14**
Clatworth 1984	Charter Grazing Trials overseen by Allan Savory, the creator of HPG						**40**
Dowling et al. 2005	0	3	5	3	5	2.5	**20.5**
Derner and Hart 2007	0	2	0	0	5	0	**9**
Derner et al. 2008	0	0	0	3	5	0	**9.5**
Gammon and Roberts 1978	Study published before even the earlier versions of Holistic Management and HPG were developed.						**0**
Gillen et al. 1998	0	3.5	0	3	0	2.5	**14**
Hart et al. 1988	0	0	0	3	5	0	**9.5**
Hart et al. 1993a	0	0	0	3	5	0	**9.5**
Hart et al. 1993b	0	0	0	3	5	0	**9.5**
Heidschmidt et al. 1982	0	2	0	3	5	0	**13.5**
Jacobo et al. 2006	0	2	0	3	5	2.5	**16**
Manley et al. 1997	0	0	0	3	5	0	**9.5**
McCollum et al. 1999	0	3.5	0	3	0	2.5	**14**
Teague et al. 2011	3	3	5	3	5	2.5	**26.5**
Teague et al. 2010	Livestock movement based on TGM optical utilization score, NOT HPG. (also heavy use of fire)						**0**
Thurow et al. 1988	0	2	0	2	5	0	**12**
Vermiere et al. 2008	0	2	0	2	5	0	**12**
White et al. 1991	0	2	0	2	5	0	**12**
Average	**0.4**	**1.7**	**1**	**2.4**	**4.1**	**1.1**	**12.87**

**Studies in non-brittle environments were given a 2.5 rating for the herd effect category since herd effect is unimportant in non-brittle environments, so whether these studies used herd effect or not should have no bearing on their rating relative to the other studies.*

Now that we have quantified how similar the grazing methods used in each study are to HPG, lets overlay that rating onto Hawkins's data.

Note: I will only be showing the overlay for her 'plant biomass (kg/hectare)" and 'animal gain (kg/hectare)" forest plots. The other two forest plots, showing 'plant basal cover (%)" and 'average daily gain (kg/head/day)" are not factors which are generally important to practitioners of Holistic Management or HPG since most are concerned with whole-ranch profits, which 'forage production/hectare" and 'animal production/hectare" are much better measurements of than the weight gain of individual animals or the number of stems per hectare. Of course, you can go and look at those two graphs yourself and overlay them with my rating of similarity to HPG, and you will find that there is little to no correlation between similarity of the grazing system to HPG and plant basal cover or individual animal gain. This is because HPG has been developed to benefit ranchers in the real world, where total forage production and total animal weight gain per hectare are far more important than plant basal cover or individual animal gain. Plant basal cover could be a useful performance measure in HPG since it is related to the function of the water cycle, but it would have to be coupled with measurements of surface litter cover and water infiltration rates to be useful.

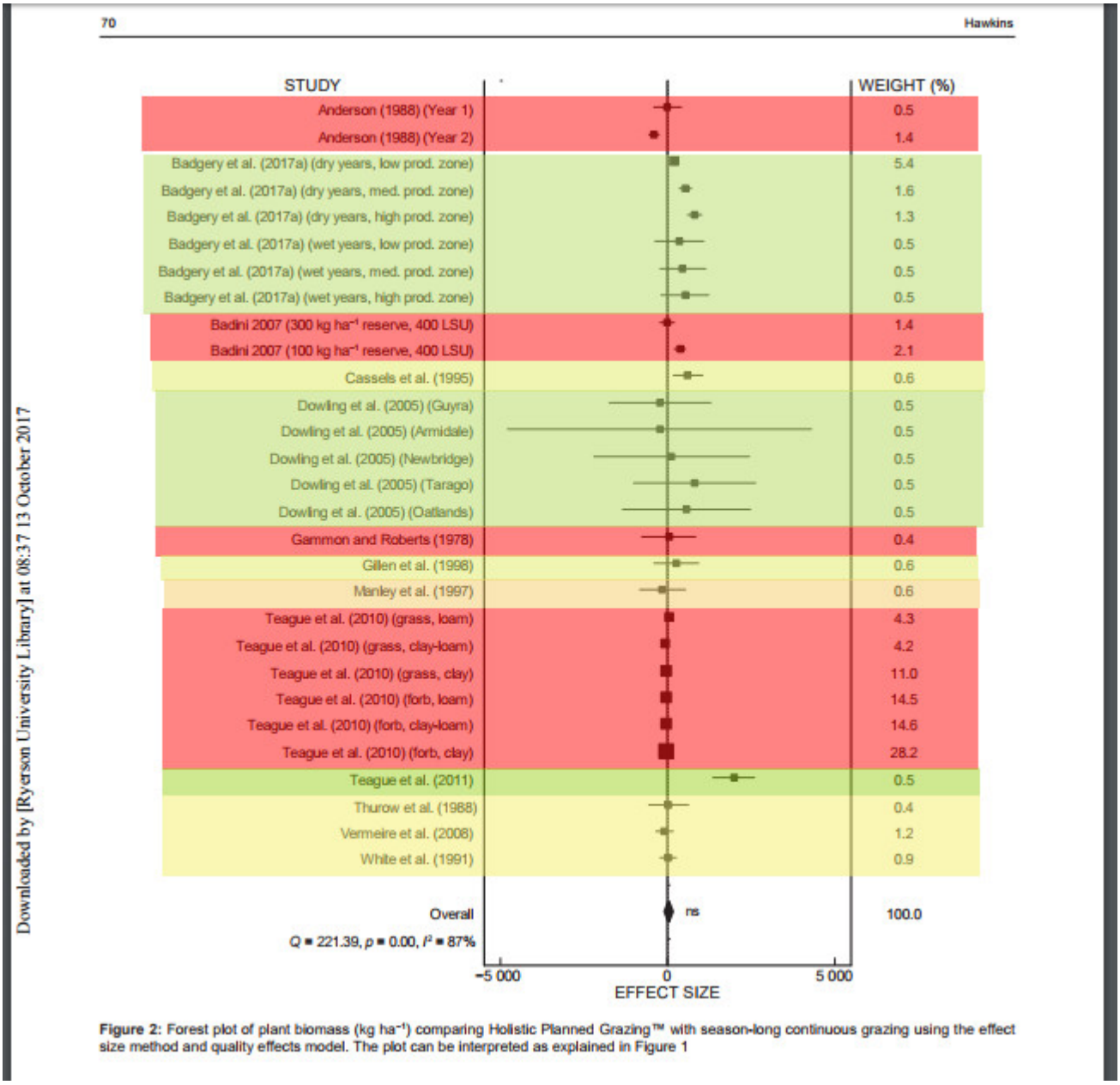

Figure 2: Forest plot of plant biomass (kg ha^{-1}) comparing Holistic Planned Grazing™ with season-long continuous grazing using the effect size method and quality effects model. The plot can be interpreted as explained in Figure 1

This is Figure 2 from Hawkins's study (Hakwins 2017). All colours are overlays which I have added. The colours correspond with how close the grazing methodology being used was to actual HPG. Red meaning that the grazing methodology was not at all like HPG and green meaning it was similar to HPG (see the rating chart above). Notice how the four studies which are most obviously not studies of HPG (in red) have been given a collective weight of 82.6 % of the overall effect size!

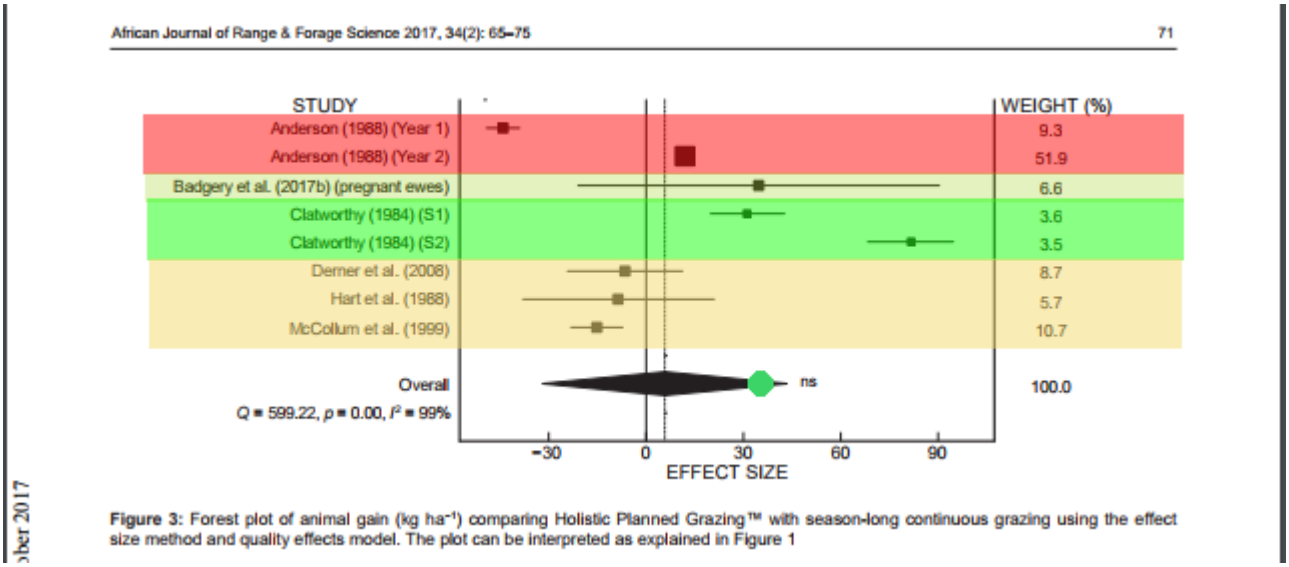

Figure 3: Forest plot of animal gain (kg ha^{-1}) comparing Holistic Planned Grazing™ with season-long continuous grazing using the effect size method and quality effects model. The plot can be interpreted as explained in Figure 1

This is Figure 3 from Hawkins's study (Hawkins 2017). I have coloured it with the same method as Figure 2 showing for each study how close its grazing methodology was to HPG. You can see once again a clear positive effect size once the non-relevant studies are eliminated. In this forest plot the data from the decidedly not-HPG "Anderson (1988)" study accounts for 61.2 % of the total effect size, whereas the data from two of the most relevant studies in the set (Badgery et al. 2017b and Clatworthy 1984) accounts for only 13.7 % of the overall effect size. I have added a green dot where I think the overall effect size should be if we are trying to actually study HPG.

Conclusion

After re-examining Hawkins's data with our new knowledge of what exactly HPG is and what it is not, we can draw a few clear conclusions:

1. Not a single study in this meta review looked at "Holistic Planned Grazing™" as it is defined in the HM literature, or by organizations like HMI or The Savory Institute (who hold the Trademark on "Holistic Planned Grazing™"), or even as it is described by Allan Savory himself.
2. Even if we ignore the official HPG literature and severely relax our definition of HPG most of the grazing practices categorized as HPG in this meta-review are still nowhere close to HPG (average rating 13 out of 40 in our rating of similarity to HPG, see above).
3. Given the above two points, Hawkins has no justification for her conclusion that "Holistic Planned Grazing does not improve production and therefore does not warrant the

additional inputs (infrastructure and labour) that the approach requires" (Hawkins 2017). **Her paper should be retracted.**

4. If we look at Hawkins's charts showing effect sizes for forage productivity and animal productivity per hectare (the two measures that HPG practitioners are actually concerned with) we see that the similarity of the grazing system to HPG is strongly correlated with a significant positive effect size. In other words, Hawkins's meta-review actually *supports* the efficacy of HPG to increase forage and animal production!
5. There are only five studies, out of twenty three, which stand out as being fairly close in grazing methodology to HPG. Clearly there is simply not enough data available on the specific practice of HPG to warrant a meta-review. Given that all five of these studies show positive effects on production, more experiments studying *actual HPG* are warranted.

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2 Replies to "Hawkins's 2017 Meta Analysis of Holistic Planned Grazing Should be Retracted"

Lesley Turner

OCTOBER 16, 2017 AT 11:39 PM

Excellent work, Sheldon

admin

OCTOBER 17, 2017 AT 9:24 AM

Thanks Lesley!