In my previous review of this paper I followed the recommended review format provided by the journal. In it I identified a number of areas for improvement which included both minor considerations and more serious issues. In this version, the serious issues still remain. In case the formatting of my review left room for doubt in terms of the magnitude of my concerns, I have provided this review in a conventional format.

Summary

This paper provides information from respirometry and DLW studies on the energetics of rhinocerous auklets. Minor clarifications on methodology from the previous version have been well dealt with and I am reasonably confident in the way that the data for this study have been collected and presented. Indeed these energetic data are novel and of potential value to the community, particularly the costs of resting on water versus resting on air and preliminary assessments of LCT in air and water. The authors have then combined these data with previously collected data on time budgets and made a comparison to similar data from other species of auks. They have opted to focus the aims and structure of the paper around a concept that this species uses a 'large part' of their daily energy budget in resting at sea. As I will explain in detail below, this decision has led to a paper where the logic is questionable, the conclusions arbitrary and predictive framework flawed. I cannot support publication of this work in its current format.

Major Points of Concern

1. Since I was not clear on this last time and the authors were confused, I have provided a document where I calculate the ratio of time spent on the water to energy spent in this activity. What is notable is a near constant ratio across the sites/studies in this ratio. Roughly speaking, this means that for all species in all places, the proportion of DEE resting on the water depends entirely on the proportion of time resting on the water in a very similar way. Thus species or populations which spend a lot of time on the water for behavioural or ecological reasons will necessarily have a larger proportion of their DEE spent on this activity. So, the Teuri rhinocerous auklets have a relatively large proportion of their DEE spent on this activity when compared to some of the other auks, but this is inevitable given the existing data on this species and its requirement to wait at sea until darkness to return to land (as you explain). However, because the ratio is below 1 in all cases, the fact remains that if this or any other species increased its time on the water, it would actually decrease its DEE. Approximately 50% of the time equates to approximately 25% of the DEE. If the rhinocerous auklets spent 100% of their time resting on water then DEE would only be 50% of the current value. This is an energy SAVING so I think highlights that it is hard to say that this species spends a 'large part' of its energy in this activity.
2. In lines 302 – 304 the authors argue that the time invested in by the two polar populations would have a relatively greater impact on the DEE. The data in my table show that while this could possibly be argued for the Brunich's Guillemot, it is most certainly not the case for the Common Guillemot at Hornoya. This population's ratio of energy to unit time is nearly identical (in fact slightly lower than) the Teuri Island guillemots. This highlights again that it is behavioural factors and not any other that drive the proportion of time and energy spent resting on the water. Probably of most interest here is the relatively low LCT of the Teuri rhinocerous auklets. This is an interesting finding and possibly indeed an adaptation to spending so much time in the water.
3. The authors choose not to evaluate the time and energy spent in other activities. That is their choice, but the result is an evaluation that something is 'large' when they have nothing to compare it to. This is obviously problematic, making the judgement entirely subjective.

Indeed as noted, the investment of energy in resting on the water is unremarkable when compared to the other auks (very similar to the Witless Bay Common Guillemots). The amount appears to be driven by the behaviour of the birds with no support provided for any other factors having an influence.

4. I still have substantial ethical concerns. The authors now acknowledge that there was a low return rate for DLW birds, but make no effort to discuss how this might influence their conclusions. I do not believe this is acceptable.
5. The ethical problem propagates into the wider study. I accept that it was not possible to simultaneously monitor birds with DLW and biologgers. However the main conclusion about time and energy investment depends on combining datasets collected from different birds in different years. Furthermore it is possible that the birds with DEE measurements were not behaving 'normally' since so many could not be recaptured. To me this then makes it not very sensible to structure the main points of the paper around this combination when there is so much uncertainty. For example, if the DLW birds only spent 45% of their time on the water surface rather than 55%, then their ratio of energy per unit time would 0.58 – identical to the Nunavut Brunnich's Guillemots. Similarly if water temperature was closer to 8 than 13, then the % of energy expenditure would go up and the ratio be closer to the Nunavut Brunichs's Guillemots at ~0.55. Other permutations are of course possible, which again weakens the case for building the paper around this concept.
6. The issues listed above then generate a problematic predictive framework for the paper. Your main hypothesis is not supported, but then as outlined above, it was not reasonable to expect it to be supported since (a) the ratio of time spent to energy spent for your population is not remarkable and (b) your birds spend so long on the water, that it is inevitable that this will form a major part of their DEE. Having a hypothesis that is unlikely to be supported makes writing your paper very very difficult. I strongly suggest that you abandon the current conceptual framework around this species expending a large part of its daily energy resting on the sea surface.

Minor Points

1. My review copy had two different abstracts attached – the values for DEE varied between the two versions.
2. The structure of the Discussion should be improved. Instead of starting with a subheading section on one of the paper's topics, start instead with a general restatement of ALL results. This first paragraph covers some of the main results and also starts to make comparisons to other studies (Dunn et al). As a result this paragraph has two topics, neither of which are really appropriate.
3. The standard of written English in this version is poor. Several sections are hard to follow (e.g. lines 305 – 307, 360 - 362)
4. Lines 309-312. Unless you feel that the rhinocerous auklets are in danger of overheating then this is a spurious comparison.

I am sure that you will not be happy to read my review, but I really strongly recommend you concentrate on a descriptive report of your interesting results. I agree that reporting the rates you measure of RMR on the water in the lab are of interest, as will the DEE values from the field. I agree that RMR on water is under-reported. People will always be interested in energetics data and more than anything I hope that you want people to read and enjoy your paper. As currently written, that is not easy as the arguments are flawed and not persuasive. The combination of the lab and field data are not particularly helping you. As a compromise, in a more descriptive version a discussion of the costs of time on water could be retained, but as a discussion point only, noting that (a) this is entirely driven most likely by behaviour (b) that you do not make an value judgement of whether those costs are 'large' and (c) that it be noted that the investment by Teuri rhinocerous auklets is

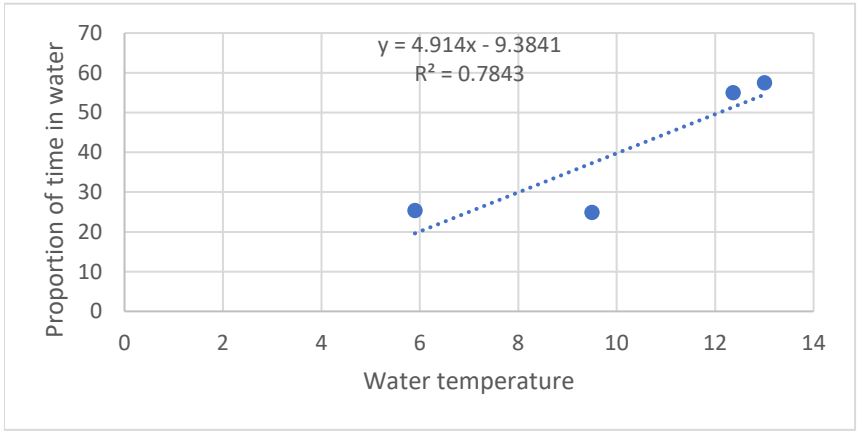
probably not particularly high when compared to other similar species, but given the uncertainty in the data it is hard to tell anyway.

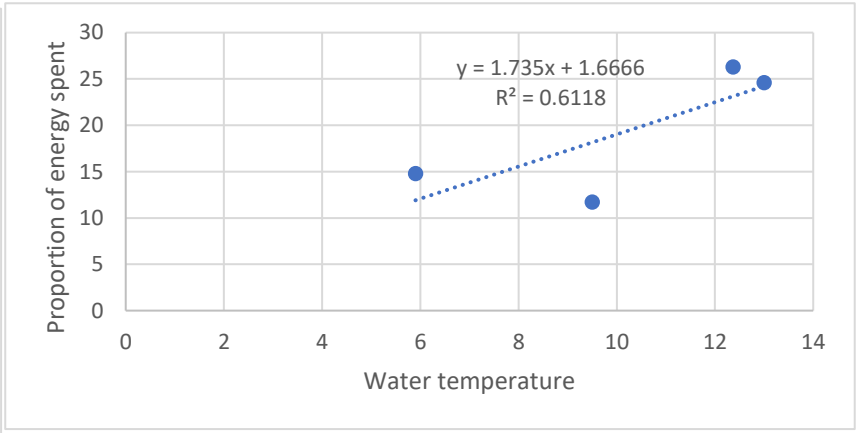
Species	Temperature	% of Time	% of Energy	Ratio of time per unit energy	Ratio of energy per unit time.	Rank
Rhinocerous Auklet	12.36842105	55.0	26.3	2.09	0.48	2
Common Guillemot	13	57.5	24.6	2.34	0.43	4
Common Guillemot	9.5	24.9	11.7	2.13	0.47	3
Brunnich's Guillemot	5.9	25.4	14.8	1.72	0.58	1

Water Temp	VO2
10.00	0.0366
15.00	0.0347
12.37	0.0356

Water temp estimated for Teuri island based on value of VO2 for water used in paper. See right for calculation

The highlighted column is the most important one as it gives an index of how the percentage of DEE changes as the percentage of time spent on water changes. The current study is second in the rankings but all of ratios are similar. All four auk species expend approximately 0.5% of their DEE for each 1% of their time budget spent on water.





The figures suggest that as water temperature increases, birds spend more time on the water. However because of the near constant ratio, the birds also increase the proportion of energy spent while resting on the water. If the Brunnich's Guillemot population breeding in colder water increased its proportion of time spent on water to 50% then the DEE proportion would increase to 29.6%. This remains broadly similar to the result from this study and you cannot necessarily invoke thermoregulation as a driver of the proportion of time spent on the water. What this means is that the apparent relationship between temperature and time on water (and hence energy spent on the water) is unlikely to be causitive. Instead it is correlative and simply the consequence of (a) some other drivers which influence time spent on water and (b) the near-constant ratio of energy per unit time that highlighted in the data above.