

R packages for movement: lessons for the statistical ecology community

Rocío Joo

M.E. Boone, T.A. Clay, S.C. Patrick, S. Clusella-Trullas, M. Basille

ISEC - June 2020



✉ rocio.joo@ufl.edu

🐦 [rocio_joo](https://twitter.com/rocio_joo)

Disclaimer:

- I'm not a package developer

Disclaimer:

- I'm not a package developer
- Ecological statistician perspective
- R user and teaching R perspective

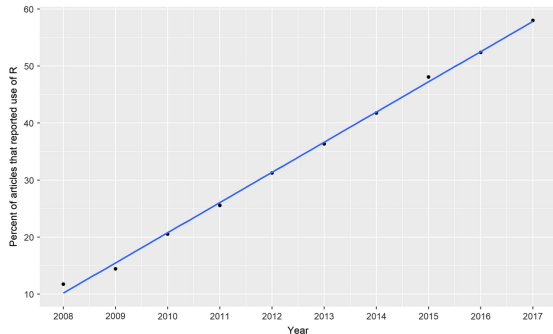
Disclaimer:

- I'm not a package developer
- Ecological statistician perspective
- R user and teaching R perspective
- I know that in many cases it's voluntary work

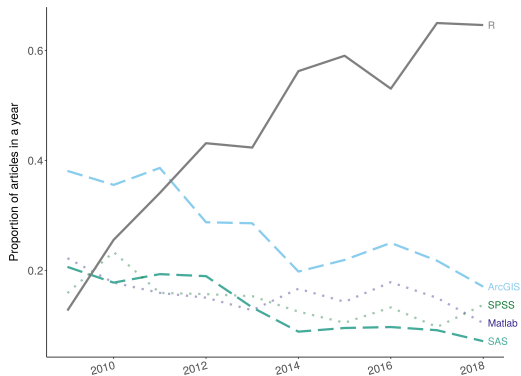
Disclaimer:

- I'm not a package developer
- Ecological statistician perspective
- R user and teaching R perspective
- I know that in many cases it's voluntary work
- I like package developers and am a grateful user

R prevalence in our world



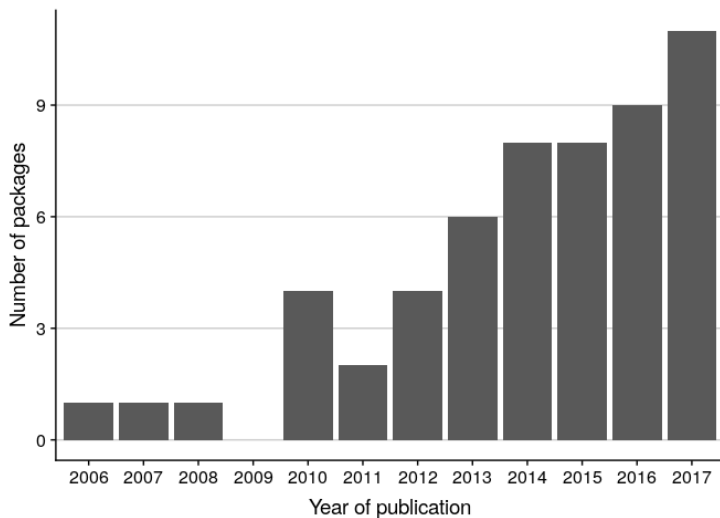
Ecology (Lai et al. 2019)



Movement ecology (Joo et al. pre-print)

R packages for tracking data

Reviewed packages*: created to process or analyze tracking data



*Research between March and September 2018 ([Joo et al. 2020](#))

Lessons from the review

- ① Documentation
- ② Maintenance
- ③ Contribution
- ④ Data class coercion
- ⑤ Peer review

Lessons from the review

For developers:

- Standard, vignettes, tutorials, articles, books

① **Documentation**

② Maintenance

③ Contribution

④ Data class
coercion

⑤ Peer review

Lessons from the review

For developers:

- Standard, vignettes, tutorials, articles, books
- Package use: how easy is it to use?

① **Documentation**

② Maintenance

③ Contribution

④ Data class
coercion

⑤ Peer review

Lessons from the review

For developers:

- Standard, vignettes, tutorials, articles, books
- Package use: how easy is it to use?
- How easy is it to do things wrong without noticing?

① **Documentation**

② Maintenance

③ Contribution

④ Data class
coercion

⑤ Peer review

Lessons from the review

① **Documentation**

② Maintenance

③ Contribution

④ Data class
coercion

⑤ Peer review

For developers:

- Standard, vignettes, tutorials, articles, books
- Package use: how easy is it to use?
- How easy is it to do things wrong without noticing?
- Package methods: effort to explain and communicate the methods behind the package?

Lessons from the review

① **Documentation**

② Maintenance

③ Contribution

④ Data class
coercion

⑤ Peer review

For developers:

- Standard, vignettes, tutorials, articles, books
- Package use: how easy is it to use?
- How easy is it to do things wrong without noticing?
- Package methods: effort to explain and communicate the methods behind the package?



Lessons from the review

① **Documentation**

② Maintenance

③ Contribution

④ Data class
coercion

⑤ Peer review

For developers:

- Standard, vignettes, tutorials, articles, books
- Package use: how easy is it to use?
- How easy is it to do things wrong without noticing?
- Package methods: effort to explain and communicate the methods behind the package?



Lessons from the review

① Documentation

② Maintenance

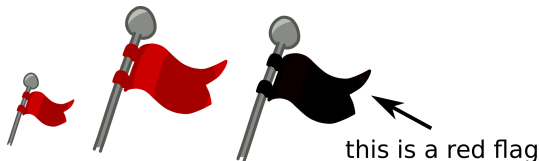
③ Contribution

④ Data class coercion

⑤ Peer review

For developers:

- Standard, vignettes, tutorials, articles, books
- Package use: how easy is it to use?
- How easy is it to do things wrong without noticing?
- Package methods: effort to explain and communicate the methods behind the package?



Lessons from the review

1 Documentation

2 Maintenance

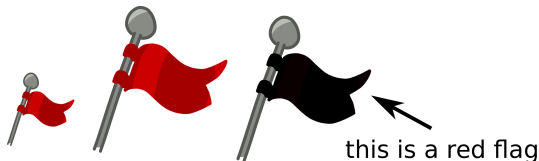
3 Contribution

4 Data class coercion

5 Peer review

For developers:

- Standard, vignettes, tutorials, articles, books
- Package use: how easy is it to use?
- How easy is it to do things wrong without noticing?
- Package methods: effort to explain and communicate the methods behind the package?



For users (and teachers):

- Do I understand what the package is doing (what I'm doing with the package)?

Lessons from the review

- ① Documentation
- ② **Maintenance**
 - Who will maintain the package over time?
 - What would happen if the student/postdoc/technician moves on? Is it the PI's responsibility?
- ③ Contribution
- ④ Data class coercion
- ⑤ Peer review

Lessons from the review

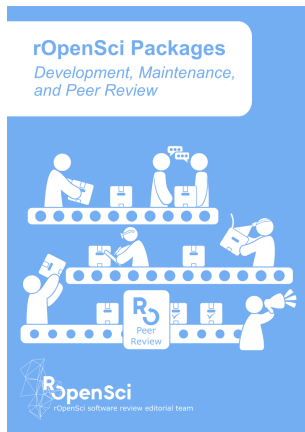
- ① Documentation
- ② Maintenance
- ③ **Contribution**
 - Does the package fill a gap or a need?
 - Does it perform a novel task?
 - Can those functions be instead added to an existing package?
- ④ Data class coercion
- ⑤ Peer review

Lessons from the review

- ① Documentation
 - ② Maintenance
 - ③ Contribution
 - ④ **Data class coercion**
 - ⑤ Peer review
- Does the package handle commonly used data classes? Spatial (e.g. sf), time, trajectory and other data classes

Lessons from the review

- 1 Documentation
- 2 Maintenance
- 3 Contribution
- 4 Data class coercion
- 5 **Peer review**

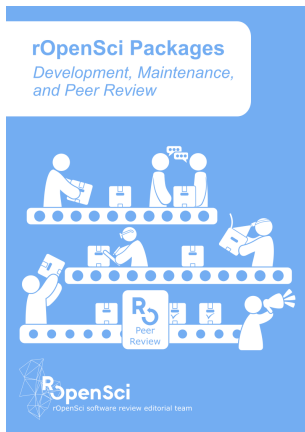


<https://ropensci.org/>

- Transparent
- Constructive
- Non adversarial
- Open peer review process

Lessons from the review

- 1 Documentation
- 2 Maintenance
- 3 Contribution
- 4 Data class coercion
- 5 **Peer review**

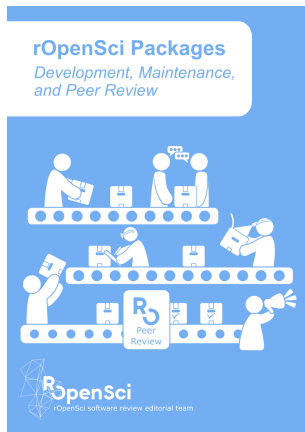


<https://ropensci.org/>

- Transparent
- Constructive
- Non adversarial
- Open peer review process
- Inclusive

Lessons from the review

- 1 Documentation
- 2 Maintenance
- 3 Contribution
- 4 Data class coercion
- 5 **Peer review**



<https://ropensci.org/>

- Transparent
- Constructive
- Non adversarial
- Open peer review process
- Inclusive

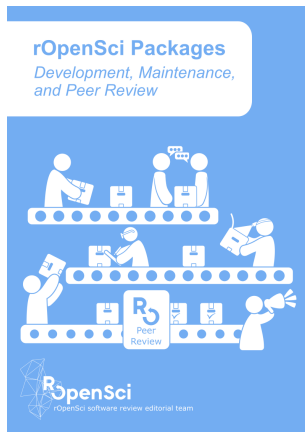
Community Call: Involving Multilingual Communities

Melina Vidoni | Emilio Bruna | Rayna Harris

June 28, 2019

Lessons from the review

- 1 Documentation
- 2 Maintenance
- 3 Contribution
- 4 Data class coercion
- 5 **Peer review**



<https://ropensci.org/>

- Transparent
 - Constructive
 - Non adversarial
 - Open peer review process
 - Inclusive
- 2 reviewers
- Usability
 - Quality
 - Style
 - Documentation

Lessons from the review

- ① Documentation
- ② Maintenance
- ③ Contribution
- ④ Data class coercion
- ⑤ **Peer review**

Journals publishing package papers:

- Journal of Open Source Software (+ rOpenSci)
- Journal of Open Source Education (+ rOpenSci)
- Methods in Ecology and Evolution (+ rOpenSci)
- Journal of Statistical Software

Thanks for your attention

 rocio.joo@ufl.edu

 [rocio_joo](https://twitter.com/rocio_joo)