



WILDLIFE
COMPUTERS

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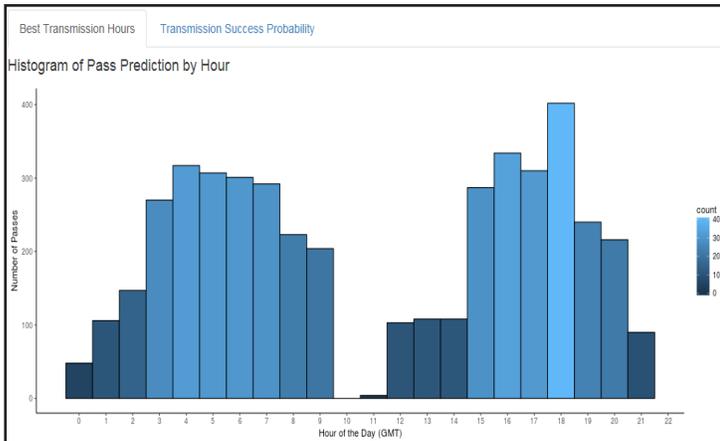
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HOW TO MAXIMIZE SATELLITE COVERAGE



CLS offers a satellite pass prediction program that helps forecast satellite coverage in a given location. Additionally, Wildlife Computers offers a tool to graph the results and display the best hours for tags to transmit data for up to six months.

The following instructions describe the two-step process.

Step One: Obtain Argos Pass Prediction Data for Six Months

To determine when satellites will be in view, log onto the CLS website at <http://www.argos-system.org> and select "DATA ACCESS." Log in with your Argos username and password. Ensure that the time settings next to the login username are set to UTC. If not, then change them using the settings icon.

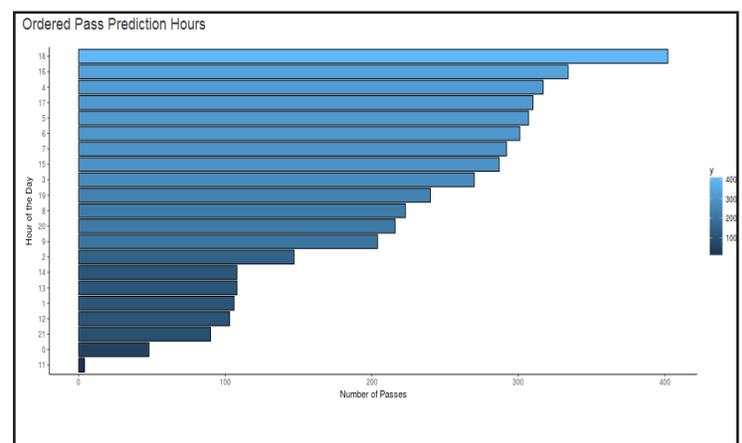
To run a simulation, select "Satellite Pass Prediction" on the right side of the dashboard.

- Set your simulation period—select today's date as the "Start Date." Then select "End Date." Use the calendar box on the right-hand side to select an end date that is six months out from today's date (the calendar will be grayed-out after six months). A shorter period can be selected for shorter deployments.
- Select satellites—ensure all satellites are selected.

- Enter location—select "Latitude/Longitude/Altitude." Input your deployment location coordinates. The location will display on the world map on the right-hand side. Altitude should be set at 0 for marine applications.
- Click "Simulate"—the results spreadsheet will now appear.
- Click "Export"—select to save as a .CSV file and save it to an easy-to-access location on your computer.
- Exit the Argos website.

Step Two: Plotting the Results

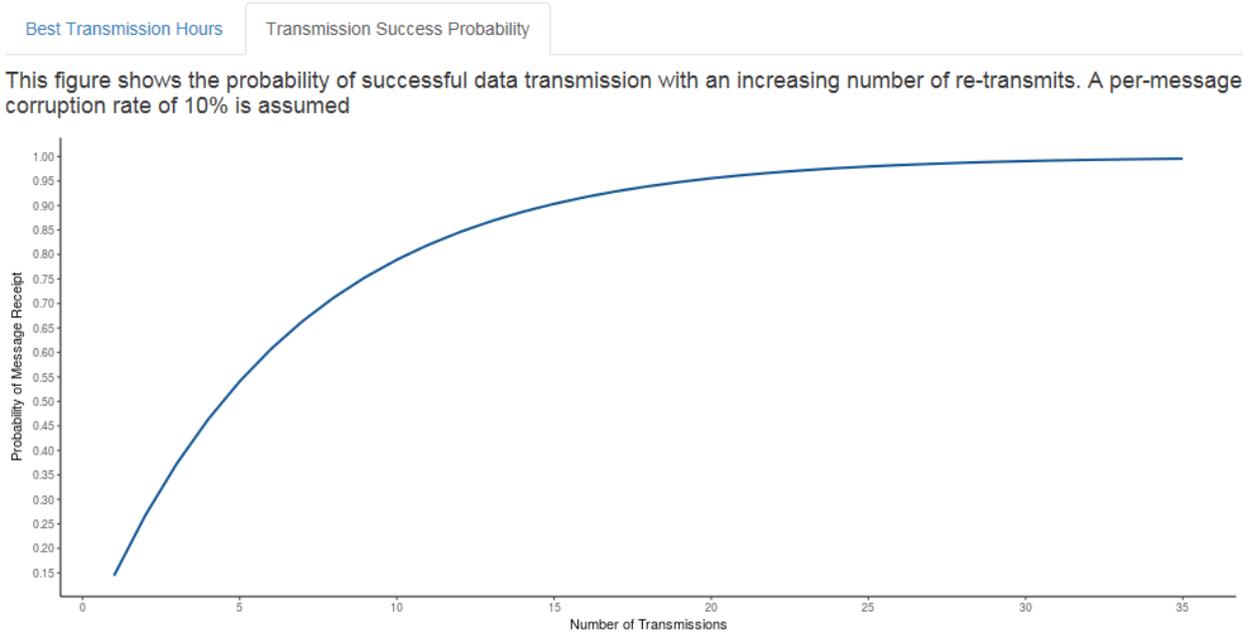
- Use a web browser to navigate to the following link: <http://bit.ly/argospassprediction>.
- Upload the Argos file—browse and import the pass prediction file saved from Argos. The program will display the pass prediction data for the next six months which will assist in selecting the best hours to activate the tag.



Maximizing Satellite Coverage – continued

Data Transmission Success Probability

The Wildlife Computers tool also displays the probability of tag data messages being received at this location plotted against the number of times the transmission is repeated.



Frequently Asked Questions

Q: What if my animal is going to move long distances?

A: If you expect your animal to move less than 500 km from your deployment location, pass prediction will improve Argos performance. However, the utility of pass prediction diminishes with distance and the number of hours you wish to transmit. If your animal will be moving greater than 500 km, contact Wildlife Computers for assistance in selecting which hours to transmit.

Q: What if my deployment is longer than six months?

A: Satellite passes will only vary slightly over time. If certain hours have very few satellite passes, then this is unlikely to change in the future.

Q: What is Wildlife Computers recommended probability of a successful data transmission?

A: We do not have a recommended value. You should consider how much missing data you can tolerate in your analysis.

Q: How many times should a data message be re-transmitted?

A: Wildlife Computers configures tags to re-transmit data messages 10 times. This works well for most applications. If you would like to discuss your application, and how you can improve the completeness of transmitted data, please contact Wildlife Computers directly.