

## A Fat Bear is a Healthy Bear

*-Measuring the Health of Polar Bears through RJL BLA Products -*

**Overview** – A recent report compiled and published by the UK-based Catlin Arctic Survey and the World Wildlife Fund (WWF) predicts that within 20 years Arctic ice cover will be completely gone during the warmer months. This is a clear indicator that global warming is affecting the planet at an alarming rate. These changes are also negatively affecting the habitat of many animals that call this part of the planet home.

**Expedition** - The expedition, which was completed in May 2009, was led by UK explorer Pen Hadow. Mr. Hadow along with his team collected data by manually drilling into the ice and analyzed the thickness along a 450-kilometer route across the northern part of the Beaufort Sea, located north of the state of Alaska.

**Findings** - The team's findings found that the area surveyed was comprised almost exclusively of first year ice. Many scientists think this is significant because traditionally the region has been made up of much older, thicker ice. Measurements taken by Hadow and his team displayed that ice floes were on average 1.8 meters in thickness. These measurements by scientists predict that this thickness will not survive next summer's ice melt.



Last Polar Bear (Arne Nørvra)

**Animal habitats are changing due to the effects of global warming.**

Based on these findings, Professor Peter Wadhams, the head of the Polar Ocean Physics Group of the University of Cambridge, is quoted as saying “With a large part of the region now first year ice, it is clearly more vulnerable. The area is now more likely to become open water each summer, bringing forward the potential date when the summer sea ice will be completely gone.”

These findings and statements clearly support that overall global warming is occurring. The next question is, what is this doing to the animals and habitats of these areas? RJL Systems products and underlying sciences are being utilized by scientists to further understand the affects of global warming on the planet. Researcher Jon Aars of the Norwegian Polar Institute is currently testing with RJL products in certain studies of Arctic polar bears. The following provides a glimpse into this study.



Picture Source: Jon Aars – Norwegian Polar Institute

**RJL Products are being utilized to measure the effects of  
Global Warming on Polar Bears body composition.**

**RJL Sciences/Norwegian Polar Institute Case Study** - Among humans, too much body fat is considered unhealthy and most adults know that rich fatty foods are not good diet choices for them. Polar bears are exactly the opposite – they seek out rich fatty foods. Polar bear cubs drink milk with more fat in it than the thickest coffee cream available. When seals are abundant, bears eat only the fat and leave the meat for foxes and gulls. Polar bears are experts in fasting; they can live without food for more than half a year. They have the remarkable ability to deposit and store fat that can be burned off later when food is scarce or unavailable. For polar bears, fat is vital for survival and is especially vital for females when they reproduce. Female polar bears need to get fattened up in autumn to be able to give birth to cubs and produce milk, and also have enough energy to return to the sea ice to hunt and catch seals to ensure their cubs survive their first years. Fat is also a vital part of insulation for bears, particularly when swimming in cold water. A skinny bear will be cooled down much faster than a fat bear.

Norwegian Polar Institute is currently using RJL BIA Analyzers to record impedance (body composition) measurements – along with recording their weight and length – to calculate how much body fat bears have. We can look at factors such as climate (sea ice conditions), age, disease and other variables to assess how they affect the condition of the bears. Female bears experience additional stress to their bodies as part of giving birth and nurturing cubs. When we re-test tagged bears over time, we can also statistically predict the chances that cubs are in good or bad condition and can survive until weaned from their mothers. In summary, fat is vital for polar bears – being able to measure how much body fat each bear has is very important when studying their ecology (*Jon Aars – Norwegian Polar Institute*).

**Conclusion** – As scientists and research try to gauge the overall effects of global warming, RJL Systems is proud to assist in providing its products and support to better understand how we as a global unit are changing and how we can make the appropriate changes to reverse the damage we have done. This short case study provides one example of how RJL's depth of knowledge and its highly accurate products are being utilized in the field of study.

**About RJL Systems** – [www.rjlsystems.com](http://www.rjlsystems.com)<sup>T</sup> – RJL Systems invented/engineered the BIA Analyzer and holds U.S. registered patents on the devices. RJL Systems is known as the premier manufacturer of Bioelectrical Impedance Analysis (body composition) instruments, both domestically and internationally. The distinguished legacy of RJL Systems began with its founding by Rudolph J. Liedtke in 1979. RJL Systems revolutionized the BIA industry through FDA clearance of the BIA Analyzer as a Class II Medical Device in 1983. Over the course of the past three decades, RJL Systems has developed an outstanding reputation for engineering and manufacturing Bioelectrical Impedance Analysis instruments of the highest quality, accuracy and repeatability. RJL Systems has delivered its instruments to institutions in every corner of the globe. RJL Systems has sold more than 15,000 BIA Analyzers, and sales volumes are steadily increasing as preventative care, wellness, research, and weight management programs become more popular. Along with RJL Systems as the premier analyzer manufacturer, Mr. Liedtke is highly relied upon as the foremost expert in the application of bioelectrical impedance analysis for numerous alternative applications.



Today, RJL Systems continues its long history of research and development, design, engineering, manufacturing and distribution of scientific instruments of the highest quality with an ongoing objective of technical innovation. It produces a complete line of BIA instruments under the Quantum brand. In addition, RJL Systems produces software and accessories for its analyzers and custom engineering and instruments for a variety of customers.

RJL Systems is committed to securing FDA clearances for all of its products and software. These self-imposed commitments to the highest standards of quality and ethics have served to create a legacy without equal in the industry. In fact, more than 1,000 abstracts and peer review articles have been written about BIA using RJL Systems instruments.

RJL Systems is registered as an ISO 9001:2000 certified company and is ISO 13485:2003 compliant (13485 - for medical devices).

Education	Hospitals
Medical	Government
Fitness	Chiropractic

**Client Base** - Today, RJL Systems' technological advances are the benchmark, or “gold-standard” within the BIA instrument industry. The company’s BIA Analyzers are the instruments of choice for scientists, researchers, clinicians, physicians, and other medical professionals whether they are in health care practices/institutions, educational, governmental, or industrial settings.

31 Out of the Top 50 America’s Best Colleges, Special Edition magazine, purchased BIA devices from RJL Systems. This represents a 68% penetration of market share. The list mentioned above names 124 colleges and universities. RJL has provided BIA system solutions to 73 out of 124 or 59% of those institutions.

Source: U.S. News & World Report