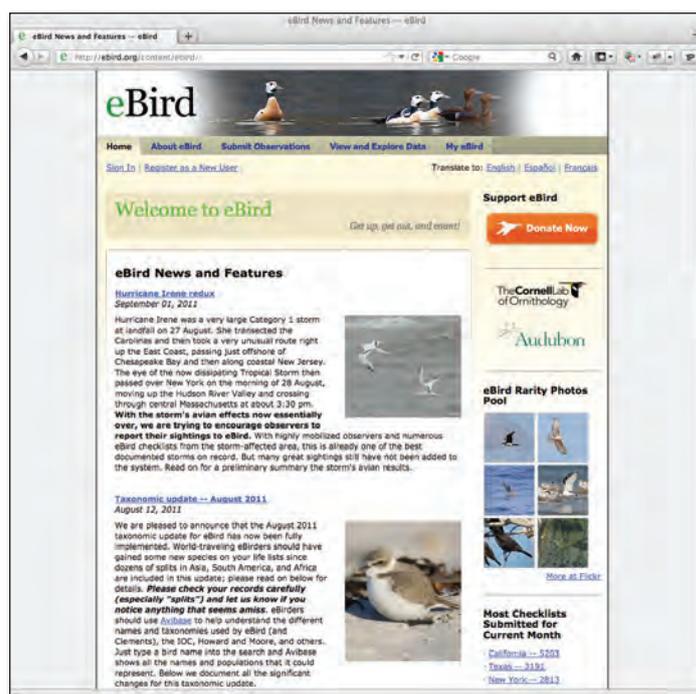


In 2009, when Ithaka S+R first studied the sustainability model for eBird, a database of bird sightings, we highlighted its strong focus on the needs of its end users and the extent to which the Information Science Department, where it is housed, encouraged eBird's project leaders to pursue entrepreneurial activities. The project leader and his three co-managers, who were selected because of their familiarity with the needs of both academic ornithology researchers and casual birding enthusiasts, have developed a range of services which have not only enhanced the project's value to both those communities, but have also provided licensing and sponsorship income to help support the project.

In 2002, the Cornell Lab of Ornithology launched eBird, an interactive database designed to gather sightings of bird species from casual enthusiasts and make that data available to researchers. eBird enables bird watchers to record observations from their expeditions and build personalised lists of the species they have encountered. These observations, in turn, become part of an aggregated dataset that researchers can use to estimate the abundance of a bird species in a given region, track high-level migration patterns, and build hypotheses about how a manmade disaster, such as an oil spill, affects species populations.¹

Housed in the Lab's Information Science Department, eBird benefits from being part of a larger organisation whose expertise and costs are spread across multiple projects, and from the department's entrepreneurial activities, which help fund its programmes and make the Lab's outputs available to a wide range of users. But eBird's achievements are not just a function of scale – it has also successfully increased the average number of monthly data submissions

¹ Matthew Loy, 'eBird: A Two-sided Market for Academic Researchers and Enthusiasts' (New York: Ithaka S+R, 2009), www.ithaka.org/ithaka-s-r/research/ithaka-case-studies-in-sustainability/case-studies/SCA_BMS_CaseStudy_eBird.pdf



www.ebird.org

from birding enthusiasts, making even more data available to researchers and putting the project in a better position to pursue opportunities to generate revenue. In May 2011, eBird recorded an all-time high of three million observations submitted in a single month.

Original sustainability model (2009)

As a project that is freely available and accessible, eBird is supported through a combination of grants from government agencies, annual payouts from the endowment of the Lab of Ornithology, and a number of initiatives that generate earned revenue. When Ithaka S+R first wrote about eBird in 2009, we found that the project leaders had developed several means to supplement their grants and endowment income, including:

- A programme to license customised versions of the eBird.org interface to regional and international wildlife societies.

In 2009, Ithaka S+R published twelve detailed case studies of online digital resources, exploring the strategies project leaders were using to sustain those projects for the long term. All of the case studies have been updated in 2011, to revisit the original sustainability models and see how they have fared over the past two years. To read the original case studies, please visit: www.ithaka.org/ithaka-s-r/research/ithaka-case-studies-in-sustainability

- An initiative to rent on-site eBird kiosks to nature centres and wildlife preserves, allowing visitors to those organisations to access background information on birds and to enter their own birding observations at the end of their visit.
- A corporate sponsorship by a binoculars manufacturer, who wished to market to eBird's specialist audience; at its peak, the sponsorship brought in approximately \$50,000 per year.

The project was able to develop these revenue sources in great part because it had already begun to attract significant usage from the birding community; securing the sponsorship, in particular, depended on the ability of eBird to attract the eyeballs of serious birders, who may be users of high-end binoculars. This success was made possible in part by a drastic shift in the project's strategy in its early days. eBird had been built with the needs of academic researchers in mind, and soon after launch, the project reached a plateau of birding submissions that seemed low to the Lab's leadership. In order to boost data submissions by birding enthusiasts, Lab of Ornithology Information Science Director Steve Kelling, who oversees the eBird project, installed three project co-managers, each of whom had ties both to the birding enthusiast world and to the academic ornithology community, and gave them a mandate to provide a better experience for the casual user. The co-managers oversaw the addition of several functions, including one that allows users to create and save lists of all the bird species they have observed, which Kelling cites as one of the key drivers for participation by birders.

The project also benefits from the expertise, resources, and infrastructure available elsewhere in the Lab of Ornithology. The Information Science Department has a role in developing and operating a host of other online projects, including the Avian Knowledge Network, an interface that pools data from eBird and other sources for use by scientists; Birds of North America, a subscription-based online resource targeted at birding enthusiasts; Science Pipes, an online visualisation tool for use with biodiversity data; and other projects. eBird's team includes Lab of Ornithology staff members who devote portions of their time to one or another of these parallel projects, and eBird also draws on the technological infrastructure and the Lab-wide knowledge that the development of all these projects has helped to build.

How the model has fared

According to the project leader, eBird's sustainability model depends heavily on growing and maintaining submissions of high-quality birding data. Since 2009, the project team has launched a number of new initiatives to increase user participation. Perhaps most important was a move to open eBird to submissions from all over the world. (Previously, data submissions to eBird could be made only by users in North America and a selection of other regions.) The increased availability seems to have paid off: during April and May 2011, key migration months for birds and, accordingly, the months

in which eBird has traditionally seen its highest submission rates, the number of submitted observations far exceeded expectations: 'We received more observations [in May 2011] than we received in our first three years', noted Kelling.

From a financial standpoint, eBird's sustainability goal has not changed since 2009: Kelling and his three project co-managers seek to secure sufficient financial resources to cover eBird's operating costs, estimated at approximately \$300,000 per year, while seeking grants to fund new developments. (Assigning a firm budget amount to eBird is difficult because the Lab of Ornithology's Information Science Department runs a number of online initiatives that share staff time and draw on the Lab's infrastructure.) Kelling's goal for eBird is to maintain an even mix among broad revenue sources: one-third coming from payouts from the Lab's endowment, one-third coming from earned revenue sources, and one-third coming from grants and contracts.

The revenue streams have fared differently over the past two years:

- **Endowment payouts:** The Information Science Department benefits from a share of the annual payout from the Lab of Ornithology's endowment. The fund is managed alongside Cornell University's general endowment. Kelling estimated that in 2011, approximately \$100,000 of the Information Science Department's share was apportioned to eBird—a slight decrease from the estimates provided in 2009, when the endowment accounted for \$110,000 of eBird's budget.
- **Sponsorship:** eBird's most significant sponsorship came from Zeiss Optics, a manufacturer of binoculars and other specialised glass products. The company's logo had a prominent place on the eBird website, for which eBird received approximately \$50,000 in the highest year of the sponsorship. With Zeiss' business goals changing, the sponsorship decreased to approximately \$20,000 in 2010, and the arrangement ended in 2011.
- **Kiosk rentals:** Kelling estimated that approximately 35 nature centres currently rent kiosks from eBird, down slightly from the total at the time of our original case study. The kiosks, which carry an annual rental fee of \$2,000, generate about \$70,000 for eBird.
- **Customised eBird portals:** The group continues to support requests for customised eBird portals from regional birding and wildlife organisations. There are approximately 30 of these now in operation, and eBird charges an annual licensing fee of \$1,000 for each. In addition, the group developed two new portals for external clients in the past year, for which they charged approximately \$10,000, putting the overall revenue from these sources at about \$50,000.

New directions and initiatives

In order to continue driving usage – and to meet its financial goal of covering the costs of operation and funding new developments to eBird – the project team has moved ahead with several new initiatives over the past year.

Sustainability dashboard

	2009 Case Study*	2011 Update**	What's Changed?
Content	1.4 million birding observations submitted per month	2+ million birding observations submitted per month	+40%
Functionality	Personal birding lists function	Ability to submit birding observations from any region in the world	Significant increase in functionality
Sustainability Model	<ul style="list-style-type: none"> ■ Endowment ■ Grants and contracts ■ Software licensing ■ Kiosk rentals ■ Host institution support ■ Sponsorship 	<ul style="list-style-type: none"> ■ Endowment ■ Grants and contracts ■ Software licensing ■ Kiosk rentals ■ Host institution support ■ Licensing for mobile app 	Sponsorship arrangement ended; eBird data licensed to mobile app developer
Cost Estimates	\$300,000	\$300,000	No change
Revenue Estimates²	\$300,000	\$300,000	Estimated revenues meeting the estimated costs for eBird
Impact	18,000 active registered users	23,000 active registered users	+27%
Sustainability Bottom Line	Project leaders reshaped eBird to focus on needs of birding enthusiasts rather than scientists, winning increased usage.	Project leaders continue to seek opportunities to generate earned revenue, while also applying for grants to fund major new developments to the resource.	

* These costs and revenues reflect eBird's 2008-09 fiscal year.

** These costs and revenues reflect eBird's 2010-11 fiscal year.

Third-party application development. Testifying to the popular interest in and commercial appeal of bird watching, a Virginia-based developer approached the eBird team about the possibility of building and marketing a mobile application that draws on eBird data to provide users with information on birds that have been spotted in their area. A deal was set up by the Lab's marketing director in consultation with Cornell University's general counsel, and the resulting app, BirdsEye, was released in 2010 and is sold through Apple's online store. The app is priced at \$19.99 per download – a relatively high cost for an iPhone app, and Kelling feels that this high price has hindered uptake.³ As the eBird team is simply a licensor in this arrangement, it has no control over the product's pricing, and limited control over the design of the project and the relationship with the app's users. The eBird team incurred no development costs, and will receive approximately 30% of the revenue on every sale. Although Kelling characterised the Lab's take from the deal as thus far 'very small', the partnership allowed them to experiment in the mobile app space without investing staff time in development, which Kelling put down to a 'risk-averse' approach on his part.

Building an international audience. Over the past two years, eBird has widened its reach, moving from a focus on North American submissions to opening its database to submissions from around the world. This initiative required the project team to update the user-facing data submission screen in order to reflect the full taxonomy of birds around the world, and to tweak the automated data filters that screen out questionable or obviously incorrect submissions. The eBird team has also built up a solid network of approximately 400 volunteer data editors to manually check entries that are flagged by the automated data filters as questionable. Most of these volunteer editors are based in the United States and work on data submissions from their own regions (where they are familiar with bird species' abundance and migration); with the expansion, then, comes the acknowledgment that the project will be less able to rely on a human data check in non-North American countries.

Pursuit of grants to further develop the resource. The Lab's Information Science Department has always depended on grants to fund new developments to its various technology projects, and eBird has been particularly active in seeking awards and contracts over the past two years. Kelling cited eBird's recent grant from the National Science Foundation to customise the data submission interface to allow Gulf Coast birders to track the impact of the BP oil spill on bird populations and breeding patterns in the region. The development work needed to add the necessary data fields to eBird also allowed the project team to improve the overall data submission process, making it more flexible and intuitive for users.

² The costs and revenues presented here are high-level estimates provided by the project leader. The organisation does not typically break out budgets on a project-by-project basis.

³ The app was the subject of a brief review on Gadgetwise, a *New York Times* blog: <http://gadgetwise.blogs.nytimes.com/2010/02/23/app-of-the-week-spot-spring-on-the-wing>.

Sustainability outlook

Today, the eBird sustainability model seems to be in a relatively strong position. Despite some fluctuations in its revenue streams and the closing of a sponsorship, the project team still has access to sufficient revenue from a mix of sources – including the Lab’s endowment and grants, and its kiosk rental and software customisation projects – to meet direct costs and fund new developments. Kelling talks often about the project team’s goal of ‘launching at least one big new initiative per year’.

Looking ahead, eBird’s increases in usage certainly bode well for the resource. In addition, the project team is encouraged by the Lab’s management to seek external earned revenue. Any surplus revenue earned can be reinvested in the project (rather than being fed into the Lab’s overall budget) – so the incentives are in place for the project team to continue its entrepreneurial efforts. If there is one potentially troubling question for the team, it is about their ability to scale up the network of volunteer data editors who help to clean the data and ensure its integrity for use by researchers.

Lessons learnt over the past two years

- Licensing to a third party can be a cost-effective way to enhance the impact of a resource, but project leaders need to balance the benefits of this against other factors, such as potential lack of control over branding and the relationship with users
- In some cases, the sustainability of a project depends in great part on the sustainability of a larger unit – in the form of the shared staff, resources, and infrastructure that an individual project can draw on
- Organisations can take concrete steps to encourage project leaders to be entrepreneurial, by allowing them to reinvest surplus revenue directly in new development

Interviewee

Steve Kelling, Director of Information Science for the Cornell Lab of Ornithology

21 June 2011, 29 April 2010 and 19 October 2010

This case study update was researched and written by Matthew Loy as part of the Ithaka Case Studies in Sustainability project.

Summary of revenues and costs

(~ = approximately)

	2008-09	2010-11	Comments
Total revenue	~\$300,000	~\$300,000	No significant change in total revenue
Endowment payouts	37%	33%	
Trail Tracker kiosks rental fees	13%	23%	
eBird customised portals	33%	17%	
eBird sponsorship	17%	-	
Grants	-	27%	
Mobile app share	-	less than 1%	
Total costs	~\$300,000	~\$300,000	No significant change in total costs
Personnel costs	77%	77%	
Non-personnel costs	33%	33%	
Number of staff	4.25 FTE	4.25 FTE	
In-kind/volunteer contributions	400 volunteer regional data editors; financial services and office space provided by the Lab of Ornithology		

Explanatory note

The information presented in this table is intended as a broad picture of revenues and budgeted costs associated with the project, not as a detailed financial report. It does not include in-kind contributions or other unbudgeted items, though these are described where they are known. The financial data, which are presented in the currency in which the project reported the information, were compiled as part of the interview process with project leaders and staff, and in some cases were supplemented with publicly available documents, such as annual reports. Many of the figures are rounded or best estimates. Some leaders preferred not to offer figures at all, but suggested percentages instead. Because of the variability in the way each institution estimated the various categories of revenues and costs, the information presented in the table is of limited value for detailed cross-project comparisons.