



## **Dip-In 2013—June 29 to July 21**

### **Report on the 2012 Dipin**

#### **The Dip-In is 18 years old!**

The (Great American) Secchi Dip-In began in 1994 in response to the lack of national water quality data. The first, and last national monitoring effort had been in 1973-74, when the EPA's National Eutrophication Survey visited more than 700 U.S. lakes and reservoirs.

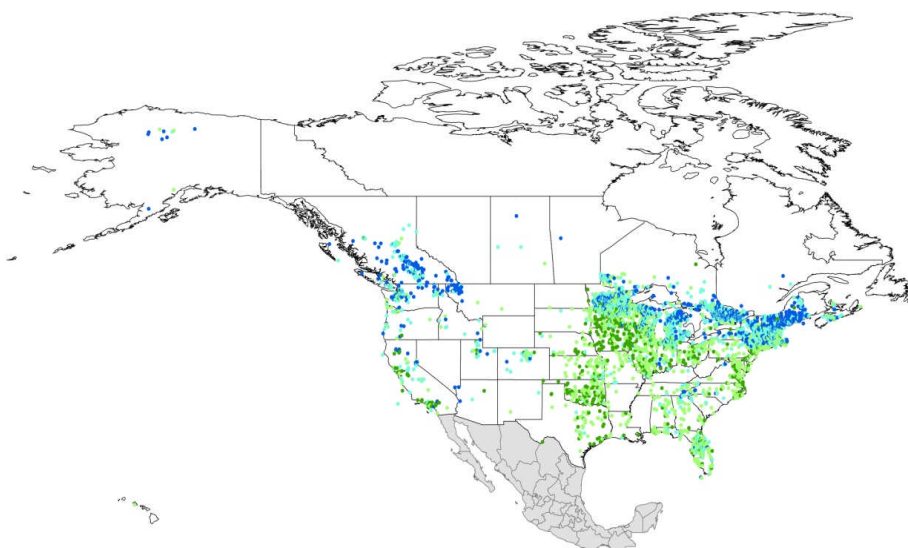
Twenty years had passed without another look at the national status of lakes, or, for that matter any other of our waterbodies. The idea of the Dip-In was to attempt to remedy this lack of information by enlisting the volunteer monitoring community to gather data.

In 1994, volunteer monitoring was in its infancy and monitoring programs were centered in only few states. A second and no less important goal of the Dip-In was to stimulate the growth of volunteer monitoring. As we have found out through the Dip-In, volunteer monitoring can be an important aspect of a state's data gathering.

#### **The Dip-In in 2012**

Eighteen years later, volunteers still faithfully contribute data to the site. Our website ([www.secchidipin.org](http://www.secchidipin.org)) has become the center of our communications effort, receiving approximately 4,000 hits per month (51,696 hits on our most popular pages in 2012). Participants can enter, edit, and retrieve data from any of the 7,000 plus contributing waterbodies. The purpose of the database is not to compete with federal or local databases, but to allow readily-available information on an international scale. For smaller programs and individual volunteers, the database allows a safe place to deposit their data.

Budget restraints have forced the closing or downsizing of a number of statewide volunteer programs. For these programs, the Dip-In database provides a place to the volunteers to continue posting data during these budgetary hard times at no cost to the program.



**The transparency of North American waterbodies. Data gathered by Secchi Dip-In volunteers**

## **The Dipin is 18 years old-Continued**

The first year of the Dip-In began with only eight mid-western states, but rapidly grew to eventually include programs from all 50 US states and most of the Canadian provinces. We learned that while there may be few statewide monitoring programs, individuals, lake associations and environmental groups have stepped into the gap and have provides data on at least some of the states' waterbodies.

Funding cutbacks curtailed the mailing of paper questionnaires and reports to the volunteers in the late 1990's. Paper questionnaires were highly effective at getting returns, but were expensive to print and mail and required a staff to enter all the returned data. This loss of a non-digital means of communicating with program coordinators and volunteers has increased the difficulty of keeping up-to-date contact records and has increased the difficulty for volunteers to enter their own data.

## **It's Not All About Transparency**

A common question by our volunteers is "I contribute my data to our local program; why don't you get the data from them?" It might seem simpler, and more comprehensive, if we were to call up monitoring programs once a year and ask for their year's data, but there are some reasons why we don't emphasize getting the data from programs.

First, we aren't dealing with a handful of programs. Volunteers from well over 400 programs, with often consisting of less than 10 volunteers participate in the Dip-In. New programs are constantly emerging, while others disappear. Since the advent of email, program contact information changes rapidly. The Dip-In simply doesn't have staff for soliciting data each year from every possible program.

Second, we try our best to not burden coordinators with data requests. We certainly don't want them to spend time entering data for 50 or 1000 volunteers at our website. We do obtain data from programs in the form of Excel or Access databases, but it takes time to change the data into the form used in the database.

Third, and most important, we ask questions that are not asked by other programs. "What is the quality of the water?" "What is the severity of problems on your waterbody?"

## **The Dip-In in 2012-Continued**

A major use of website continues to be the Methods section of the site. These pages are intended to give individuals and programs some insight into what variables can be measured by volunteers, what are their importance, and what methods are currently being used by volunteer programs. The most popular pages are those on techniques of phosphorus, chlorophyll, Secchi depth, and trophic state information.

The ability for volunteers to enter their own data at the website may have been the most important one in keeping the Dip-In going. It's not easy for some volunteers to navigate the site because of the quirkiness and size of the entry forms, but for those that overcome these barriers, a series of graphical tools are available for data analysis. Paper forms, and eventual entry, are still available as well.

## **Transparency-Continued**

We don't get, or even want, a coordinator to answer this type of question for the volunteer.

From these questions about quality has come a recognition that there are not only regional differences in transparency, but that these differences are mirrored in distinct regional attitudes about what is meant by "excellent" water quality and what are the most pressing problems confronting volunteers.

Why are volunteer perceptions important? Management of our water resources isn't necessarily just a matter of making rules and decisions based on some theoretical "ideal" quality or even one based on comparisons to "pristine" water quality.

Management should incorporate the perceptions of the users, and that means understanding what the public consider to be the major problems of their waters. What the Dip-In data has shown us is that volunteers see different problems from what is traditionally thought of as water quality.

So, this is a plea to have volunteers use the website to enter their data. If for any reason the website is too confusing or is unavailable, the downloadable paper form has many of the needed perception questions.

## Trends and Plenty of Them

One goal of the Dip-In was to determine if waterbodies are changing. The question is critical to funding agencies as well as to the individuals who live on or use an aquatic resource. For the purpose of our study we combined the Dip-In data with a larger database produced by Dr. Dan Canfield at the U of Florida. This produced a set of data on 4,275 waterbodies with 5 or more years of data, nearly double the information available from the Dip-In alone. Our approach was to examine the trends in transparency in each individual lake.

The results? We found that only a small fraction (17.6%) of the waterbodies was changing significantly (with a 90% chance of being correct). We also found that, of the waterbodies that were changing, almost an equal number (8%) were improving transparency while the other 8% had decreasing transparency.

The surprising news is that the distribution of changing lakes is not uniform across the continent. Most of the changing lakes, both increasing and decreasing in transparency are limited to regions within the boundaries of past glaciations (red or blue lines) or in Florida. The only common denominator between glaciated regions and Florida is that there are more natural lakes in these regions

Our enthusiasm for a new discovery unfortunately has to be tempered by the unfortunate fact that, outside of the glaciated region and Florida, few states had much data on waterbodies for a minimum of 5 years. Locations where there was an abundance of data were generally where volunteer monitoring programs exist, or existed.

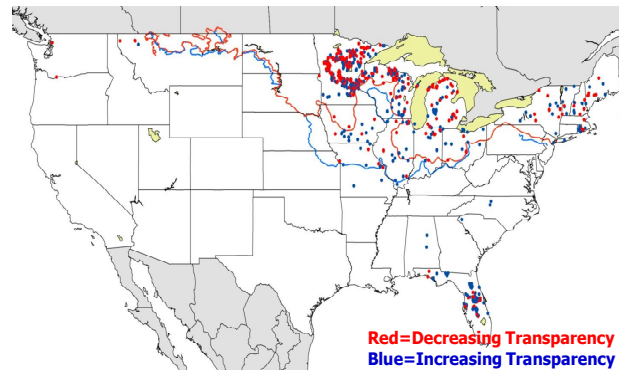
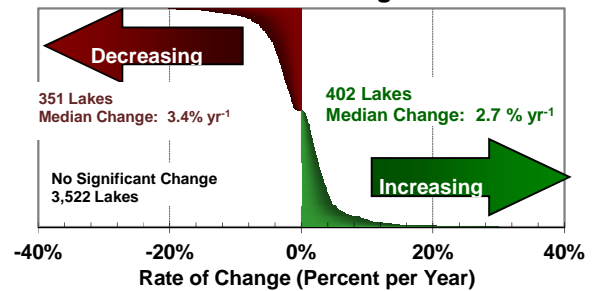
## Don't Forget to Upgrade Your Lake Data

If you have registered as a volunteer at the Dip-In website, you have the ability to edit any data you have entered at the site. You can have access to **all** the information you have contributed by sending me an email. Coordinators can edit any data for any waterbody in their program

You also have the ability to edit the waterbody information presented for your waterbody. You can also add pictures of the site and of activities taking place there.

It's your lake or stream and your data. You should have the ability to proudly present it to the world.

## Waterbodies with Significant ( $p=0.10$ ) Rate of Change



Our preliminary conclusions are that (1) voluntary monitoring programs are an important part of a program's ability to detect trends in transparency, (2) there are regional differences in waterbodies in transparency, in volunteer attitudes about water quality, and the waterbodies' susceptibility to change, and (3) for successful management, we had better figure out what is involved in producing those regional differences.

## Dip-In 2013: June29 to July 21

You are welcome to participate in this year's Dip-In. Data that fills in 5+ years information can be used for trend analysis. See our website at: <http://www.secchidipin.org>.

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