Using the Web-based Water Rights Accounting Application

Idaho Department of Water Resources

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Water Rights Accounting
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Welcome

The Water Rights Accounting is a set of computational tools that the Watermaster uses to quantify natural flow available, natural flow use, and storage use on a daily, after-the-fact basis. The water rights accounting computes the natural flow available using streamflow, reservoir, and diversion measurements. Based on the natural flow available, the water rights accounting determines which water rights are in priority.

The Idaho Department of Water Resources provides this interactive web application as a way for the public to easily examine surface water rights accounting data used in, or output from, the accounting program. This application's initial page is https://research.idwr.idaho.gov/apps/Hydrologic/Accounting. That page helps you gather the information to query the IDWR's accounting database; results are viewed on the second page of the application – the **Report** page – which displays the selected time-series data.

The **Report** page can be accessed by internet address, without going through the initial page. See Request to View Data without Using the Initial Page and Getting Help - Report Page.

This web-based application allows you to view, print, graph and download the historical data and the output from the accounting program. That output may alternatively be referred to as water rights allocations, ALC data or accounting data.

Historical data and accounting data are available for the following rivers:

- Bear River
- Big Lost River
- Boise River

- Payette River and tributaries
- Upper Snake River

Note that only historical data (no accounting) are available for the following river systems:

- Billingsley Creek
- Garden and Challis Creeks
- Morgan Creek

- Upper Salmon River Basin
- Stanley Area
- Thousand Springs

Access to historical data for these six river systems is slated to be moved to another application in the near future. A link to the new application will be provided on the initial **Accounting** page when that happens.

Conditions of Use

Users of this on-line application are hereby warned that these data are subject to change and not considered the legal representation of those data collected and maintained by the IDWR. The persons who maintain this application are not the scientists, engineers and support staff responsible for providing the data. Clarification of derivation, or verification of correctness, can only be accomplished by contacting personnel of the IDWR. An example of the disclaimer, available by clicking the **Conditions of Use** link on the page, is shown below. The text of this disclaimer is included in every ZIP-file created by this program.

Terminology

Throughout this document, you will see the abbreviations HST and ALC. Those stand for history (or historical) and allocations data, respectively. The allocations data are the modelled, calculated results from the Water Rights Accounting model. The historical data are the recorded flows, discharges, storage, etc. of the sites used in the model.

Specifying the Data to View and Download

The initial web page allows you to select the data you wish to view or download but is essentially blank until you select a river system. Follow the steps as they are enumerated. Once you select a river system, you will see all of the sites on that river. No years-of-record will be displayed until you place a checkmark in the checkbox of the site you wish to view or download.

This form can be accessed by clicking on *Water Rights Accounting Tabular Data* link on the *Water Rights Accounting* web-page, https://research.idwr.idaho.gov/apps/Hydrologic/Accounting/.

Once you select the sites and years you wish to view and click the **Submit** button, you will be taken to the *Report* page.

The initial page is formatted so that all of the steps are viewable, on a single page, on desktop browsers. The steps are enumerated in order to guide you through the process.

1. Select a river system.
2. Select one or more sites from that river system or basin. When you select a site by placing a check in a site's checkbox, the list of available years (in Step 4) is updated to reflect the years for which data is available for the most recently selected site.
3. Select the year(s) you wish to view/download after you have selected all of the sites.
4. When you click the **Submit** button, the list of sites and years selected will be passed to the *Report* page for viewing/downloading.

*The **HST Count** and **ALC Count** columns refer to the number of years of data available for history and allocations (accounting), respectively. As shown in the table, data are not available for all years, for all sites. The last site selected will determine the years used in the query, which means that, on the **Report***

page, there is a chance that you will receive an error message if you select a site/year combination for which no data exist in the database. **Note:** the years for which data are available, listed in *Step 3*, are color-coded to indicate whether accounting or history data (or both) are available. The legend above *Step 3* shows the color and font-coding, chosen to help those with color-deficient vision.

The "select all sites" checkbox in the table-header, *Step 2,* allows you to select all of the sites for a river system.

If you place a checkmark in it, the list-of-years in *Step 4* will not be filled until you uncheck and check one of the sites in *Step 3*. If you place a checkmark in it and then "un-check" a site, you will see:

Requesting to View All Data for a River

Even though you can use the "select all sites" checkbox to request data for all sites on a river (from the initial page), that request may fail due to the number of characters sent to the server – every SiteID for the river is present in the request. The query works reliably for small river systems. For example, the request for the entire Boise River (116 sites) receives a response. However, the Upper Snake River contains 475 sites, which means that the request for that data is over 5KB; it will be rejected by the server. This message is displayed:
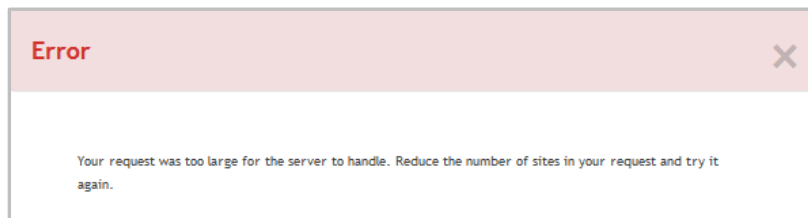
You may experience a similar problem if you try to request to download the data for all sites, for all years, for even the smaller river systems. See Large Requests.

Request to View Data without Using the Initial Page

If you need to view all of the data at one time, specify only the river system – no SiteIDs or years. Use the following format, specifying the proper river-system abbreviation and history or accounting:

https://research.idwr.idaho.gov/apps/Hydrologic/Accounting/Report?riverSystem=PAY&yearlist=&yeartype=IY&hstalc=history

River System Abbreviations

BAR	Bear River	
BGY	Billingsley Creek	No accounting data
BL	Big Lost River	
BOI	Boise River	

GCC	Garden and Challis Creeks	No accounting data
MOR	Morgan Creek	No accounting data
PAY	Payette River and Tributaries	
SAL	Upper Salmon River Basin	No accounting data
SNK	Upper Snake River	
STA	Stanley Area	No accounting data
TSP	Thousand Springs Area	No accounting data

Note that, while you can request to view an entire river system you will only be able to download or graph data for a single site, for a single year. In order to download all of the data for an entire, select only that site on the initial page. As explained below, this is a restriction enforced by the server.

Searching for Sites by Site ID or Name
The **Search** text-box at the top of *Step 3* allows you to search for a site by ID or name.

Sorting Columns
You cannot choose to view only one type of site, such as all pumps. But you can sort the **Site Type** column to group those sites. Click the up/down arrows beside each column heading to sort the data by the values in that column.

Calling this Application from the Interactive Map
The *Report* page is accessible from the Water Rights Accounting interactive map application. If you click on a point in the mapping application, https://maps.idwr.idaho.gov/Map/Accounting, you will be taken directly to the data for that site, on the *Report* page. All of the years of data for that single site will be displayed. The link is the same as those referred to as "bookmarks" in Appendix - API Reference.

The Report Page
As explained below, the sites and years available for viewing on the *Report* page is governed by what you select on the initial page. Further, depending on how you accessed the *Report* page, actions may be restricted.   For example, if the river-system has fewer than 200 sites, you will be able to view and download all data for all sites on the river. If it is a large river-system, such as the Upper Snake, you will be able to view data for all of the sites, for all of the years using the internet address explained in Requesting to View All Data for a River. However, that kind of request restricts you to downloading or graphing data for the single site/year combination you are currently viewing. See Large Requests.

If you must download data for multiple years/sites for the Upper Snake River, select less than 200 sites on the initial page and then submit the request. This restriction is imposed by the web server, so it cannot be changed.

Viewing the Data

Once you click the **Submit** button, the *Report* form will open in new tab or window. Regardless of the number of sites and years you select on the initial page, you will see the information for a single site/year combination on the *Report* page. You can view the data for any of the sites, for any of the years you selected on the initial page by using the **Site / Year/ YearType** dropdown lists at the top of the page.

Historical data for Site ID:13010500
Reservoir name: JACKSON LAKE

Daily mean values for reservoir contents in acre feet
Irrigation Year, November 2013 To October 2014

13010500: JACKSON LAKE ▼ Site			History	Accounting		2014 ▼ Year		Irrigati ▼ YearType		

13010500: JACKSON LAKE
13011000: SNAKE RIVER NR MORAN WY
13022500: SNAKE RIVER AB RESERVOIR NR ALPINE WY

				MAR ⬍	APR ⬍	MAY ⬍	JUN ⬍	JUL ⬍	AUG ⬍	SEP ⬍	OCT ⬍
1	156702	169800	182713	200347	224064	245928	299933	651061	822789	781712	707073	640711
2	157000	170600	183313	200744	225488	246342	303754	663171	823809	778700	704615	640946
3	157470	171414	183903	201740	227122	246968	309527	676037	824581	775699	702157	640465
4	157600	171804	184300	202137	228546	247170	316600	688227	825601	772931	699698	640465
5	157854	172194	184503	202137	229600	247998	324333	697983	826360	770682	697000	640465
6	158050	171995	184503	202732	230389	248411	332757	709040	827380	768600	694560	640465
7	159005	172585	185093	203537	230797	249027	341445	719593	827890	766450	692119	640711
8	159960	172965	185700	205745	231206	249900	347082	729720	828400	764213	689203	640946
9	160540	173356	186486	206756	231813	250894	353649	738374	828400	761222	686512	640946
10	160727	173555	187279	206756	233238	252337	359132	747520	828400	758232	683300	641193
11	160900	173746	187700	207551	233646	252549	363072	755994	828649	755241	680179	641400
12	161111	174400	188300	208758	234054	253579	366799	763715	828800	752300	677501	641427
13	161600	174600	188662	209730	234463	255436	370097	771682	828649	749271	674810	641427
14	162075	174726	189649	211300	235688	256475	374297	778956	826870	746280	672135	641400
15	162262	175300	190045	212979	236096	257919	379164	783475	825900	743564	669474	641200
16	163220	175896	190645	213990	236913	258534	387146	788239	825340	741090	666565	641193
17	164001	176087	191235	214392	236913	259574	396929	794007	823050	738869	664389	641193
18	164201	176500	191438	214991	237730	261431	410565	797012	820509	736394	662400	641193
19	165371	176867	192232	215393	237929	263298	422923	799800	818486	734200	660274	641193
20	165561	177457	192232	216198	238338	265178	433296	802328	816216	732200	658086	641193
21	166151	177648	192618	217209	238547	268114	447592	805103	813688	730456	655661	641427
22	165952	177838	192822	217209	238955	272717	463986	808643	811300	728476	653485	641427
23	165761	178818	193218	217601	239364	276072	481176	812171	808890	726750	651546	641427
24	166151	179008	193218	218612	239364	279417	499631	816722	806362	724771	649121	641193
25	166732	179989	193412	219613	239772	283407	519327	817474	803327	722550	646240	640946
26	166732	180179	194205	219613	240589	287205	540085	818486	800306	720337	644069	641427
27	167322	180179	194750	220016	241814	290809	562140	819251	797777	717878	642871	641674
28	167712	180569	196060	221831	242222	293149	584105	820262	794509	715660	641909	641427
29	168200	181200	197370	--	242631	295480	604528	821014	791239	712962	640711	641427
30	168873	181740	198679	--	244273	297603	621734	822030	788239	710755	640946	641674
31	--	182400	200154	--	244687	--	636861	--	785226	709040	--	641674
MEAN	162827	175981	190208	211058	235686	263764	424312	767236	816353	743467	670287	641157
MAX	168873	182400	200154	221831	244687	297603	636861	822030	828800	781712	707073	641674
MIN	156702	169800	182713	200347	224064	245928	299933	651061	785226	709040	640711	640465

IRRIGATION YEAR 2014 TOTAL 161875083 MEAN 443493

Output All ☑

Table as PDF ▼   Submit

Submit questions about these data, via e-mail, to HydroInfo or use the *Contact Us* link, at the top of this page, for more options.

Download All ☑

CSV ▼   Download

The sites and years available for download, printing or graphing – whether history or accounting data – is governed by what you select on the initial page. Each time you select a group of sites, the **Report** page is opened in a new browser tab. Therefore, you can open several **Report** pages and visually compare tabular data for two datasets by switching between browser tabs.

Possibility for Error

As mentioned previously, you may encounter an error while displaying data. For example, a flow gage (13057155) has 36 years of historical record and an upstream pump (13057146) has records for only the last seven years. So, if you select the pump site before selecting the gage site, you will be able to select years earlier than 2009 – the earliest data for the pump site. In which case, choosing to display (non-existent) data for the pump, will cause the following error message.

You may view, graph and download data for multiple years, for multiple sites. However, the server limits the number of sites you can request to roughly 200. See Large Requests.

Downloading Data

You have the choice to download the data in any of three formats, CSV, JSON or XML. The checkmark in the **All** checkbox of the **Download** panel indicates that you wish to download all of the sites, for all of the years you selected on the initial web page. If you remove the checkmark, only the site/year that is visible on the web-page will be downloaded.

Programmers' note: You may bypass this user interface and download data directly from the **Water Right Accounting** web service. To do so, specify comma-delimited lists of sites and years, download type (CSV, JSON or XML), etc. This will deliver a compress (ZIP) file of the results.
https://research.idwr.idaho.gov/apps/Hydrologic/Accounting/Download?sitelist=13010500,13011000,13022500&yearlist=2015,2014,2013,2012,2011&yeartype=IY&raw=true&downloadtype=CSV&hstalc=history%20

If your request-string is longer than 1500 characters you must use HTTP POST.

Additional options and web services are available. For example, the IDWR's **WaterServices** web service provides a JSON result which can be consumed by your web applications. See Appendix – API Reference for more information. If you need more information, please contact HydroInfo@idwr.idaho.gov.

When you select **CSV** from the drop-down list and click the **Download** button, you will see a dialog asking if you wish to open or save the downloaded data. Data, whether history or accounting, will be represented in the downloaded file by one record per row.

13010500_history.csv
13010500_SiteDetails.csv
13011000_history.csv
13011000_SiteDetails.csv
13022500_history.csv
13022500_SiteDetails.csv

Opening WRA_20160929_31ac8.zip

You have chosen to open:

WRA_20160929_31ac8.zip

which is: Compressed (zipped) Folder (12.5 KB)
from: http://localhost:54166

What should Firefox do with this file?

○ Open with   Windows Explorer (default)

● Save File

☐ Do this automatically for files like this from now on.

OK   Cancel

For each site downloaded, the ZIP-file contains a data-file (file-name reflects the SiteID and data-type, like 13010500_history.csv). The included files will be of the type you specified – CSV, JSON or XML. Site-details files and conditions-of-use document will be included. **Example of data from CSV-file:**

SiteID	SiteType	JDate	Reservoir Contents (Acre Ft)	Surface Elevation (Feet)	DataDate	YR
13010500	R	2013305	156702.41	6738.67	11/1/2013 6:00	2014
13010500	R	2013306	157000	6738.66	11/2/2013 6:00	2014
13010500	R	2013307	157469.95	6738.71	11/3/2013 6:00	2014
13010500	R	2013308	157600	6738.69	11/4/2013 7:00	2014
13010500	R	2013309	157853.72	6738.73	11/5/2013 7:00	2014
13010500	R	2013310	158050.3	6738.74	11/6/2013 7:00	2014
13010500	R	2013311	159005.05	6738.79	11/7/2013 7:00	2014

The JSON and XML files contain the same column headings as the CSV-file; **record #2 from XML-file:**

```xml
<?xml version="1.0"?>
<IDWR_Water_Rights_Accounting>
  + <_13010500_history.xml>
  - <_13010500_history.xml>
      <SiteID>13010500</SiteID>
      <SiteType>R</SiteType>
      <JDate>2013306</JDate>
      <Reservoir_x0020_Contents_x0020__x0028_Acre_x0020_Ft_x0029_>157000</Reservoir_x0020_Contents_x0020__x0028_Acre_x0020_Ft_x0029_>
      <Surface_x0020_Elevation_x0020__x0028_Feet_x0029_>6738.66</Surface_x0020_Elevation_x0020__x0028_Feet_x0029_>
      <DataDate>11/2/2013 6:00:00 AM</DataDate>
      <YR>2014</YR>
  </_13010500_history.xml>
  + <_13010500_history.xml>
```

Record #2 from JSON-file:

```json
{
  "SiteID": "13010500", "SiteType": "R", "JDate": "2013306",
  "Reservoir Contents (Acre Ft)": "157000",
  "Surface Elevation (Feet)": "6738.66",
  "DataDate": "11/2/2013 6:00:00 AM", "YR": "2014"
},
```

The site name, site-type, etc., are delivered in a separate data-file, named like 13010500_SiteDetails.csv.

SiteId	SiteType	StationName	FullName	River	ALCSiteType
13010500	R	JACKSON LAKE	JACKSON LAKE	SNK	R

Copying Data

If you wish, you may copy the tabular data by selecting a portion of the dataset and using the key-sequence required by your device – this is Ctrl-C on Windows and Linux platforms or Command-C on Apple OSX platforms. This key-sequence varies on iOS, Android and other phone/tablet devices.

Historical data for Site ID:13010500
Reservoir name: JACKSON LAKE

Daily mean values for reservoir contents in acre feet
Irrigation Year, November 2013 To October 2014

13010500: JACKSON LAKE ▾ Site | History | Accounting | 2014 ▾ Year | Irrigati ▾ YearType

| DAY	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1	156702	169800	182713	200347	224064	245928	299933	651061	822789	781712	707073	640711
2	157000	170600	183313	200744	225488	246342	303754	663171	823809	778700	704615	640946
3	157470	171414	183903	201740	227122	246968	309527	676037	824581	775699	702157	640465
4	157600	171804	184300	202137	228546	247170	316600	688227	825601	772931	699698	640465
5	157854	172194	184503	202137	229600	247998	324333	697983	826360	770682	697000	640465
6	158050	171995	184503	202732	230389	248411	332757	709040	827380	768600	694560	640465
7	159005	172585	185093	203537	230797	249027	341445	719593	827890	766450	692119	640711
8	159960	172965	185700	205745	231206	249900	347082	729720	828400	764213	689203	640946
9	160540	173356	186486	206756	231813	250894	353649	738374	828400	761222	686512	640946
10	160727	173555	187279	206756	233238	252337	359132	747520	828400	758232	683300	641193
11	160900	173746	187700	207551	233646	252549	363072	755994	828649	755241	680179	641400
12	161111	174400	188200	208758	234054	252579	366799	762715	828800	752300	677501	641427

Downloading the Data in Tabular Format – Suitable for Printing

You may save the data in a tabular format using the *Table as PDF* option in the **Output** panel. The checkmark in the **All** checkbox of the **Output** panel indicates that you wish to create output for all of the sites/years you selected on the initial web page. If you remove the checkmark, a report for only the site/year that is visible on the web-page will be created. As with other downloads, once you click the **Submit** button, you will be prompted to open or save the ZIP-file (contains a single PDF for all sites).

6-APR-2016

13010500 JACKSON LAKE

DAILY MEAN VALUES FOR RESERVOIR CONTENTS IN ACRE FEET, IRRIGATION YEAR, NOVEMBER 2013 To OCTOBER 2014

DAY	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1	156702	169800	182713	200347	224064	245928	299933	651061	822789	781712	707073	640711
2	157000	170600	183313	200744	225488	246342	303754	663171	823809	778700	704615	640946
3	157470	171414	183903	201740	227122	246968	309527	676037	824581	775699	702157	640465
4	157600	171804	184300	202137	228546	247170	316600	688227	825601	772931	699698	640465
5	157854	172194	184503	202137	229600	247998	324333	697983	826360	770682	697000	640465
6	158050	171995	184503	202732	230389	248411	332757	709040	827380	768600	694560	640465
7	159005	172585	185093	203537	230797	249027	341445	719593	827890	766450	692119	640711
8	159960	172965	185700	205745	231206	249900	347082	729720	828400	764213	689203	640946
9	160540	173356	186486	206756	231813	250894	353649	738374	828400	761222	686512	640946
10	160727	173555	187279	206756	233238	252337	359132	747520	828400	758232	683300	641193
11	160900	173746	187700	207551	233646	252549	363072	755994	828649	755241	680179	641400
12	161111	174400	188300	208758	234054	253579	366799	763715	828800	752300	677501	641427
13	161600	174600	188662	209730	234463	255436	370097	771682	828649	749271	674810	641427
14	162075	174726	189649	211300	235688	256475	374297	778956	826870	746280	672135	641400
15	162262	175300	190045	212979	236096	257919	379164	783475	825900	743564	669474	641200
16	163220	175896	190645	213990	236913	258534	387146	788239	825340	741090	666565	641193
17	164001	176087	191235	214392	236913	259574	396929	794007	823050	738869	664389	641193
18	164201	176500	191438	214991	237730	261431	410565	797012	820509	736394	662400	641193
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20	165561	177457	192232	216198	238338	265178	433296	802328	816216	732200	658086	641193
21	166151	177648	192618	217209	238547	268114	447592	805103	813688	730456	655661	641427
22	165952	177838	192822	217209	238955	272717	463986	808643	811300	728476	653485	641427
23	165761	178818	193218	217601	239364	276072	481176	812171	808890	726750	651546	641427
24	166151	179008	193218	218612	239364	279417	499631	816722	806362	724771	649121	641193
25	166732	179989	193412	219613	239772	283407	519327	817474	803327	722550	646240	640946
26	166732	180179	194205	219613	240589	287205	540085	818486	800306	720337	644069	641427
27	167322	180179	194750	220016	241814	290809	562140	819251	797777	717878	642871	641674
28	167712	180569	196060	221831	242222	293149	584105	820262	794509	715660	641909	641427
29	168200	181200	197370	--	242631	295480	604528	821014	791239	712962	640711	641427
30	168873	181740	198679	--	244273	297603	621734	822030	788239	710755	640946	641674
31	--	182400	200154	--	244687	--	636861	--	785226	709040	--	641674
MEAN	162827	175981	190208	211058	235686	263764	424312	767236	816353	743467	670287	641157
MAX	168873	182400	200154	221831	244687	297603	636861	822030	828800	781712	707073	641674
MIN	156702	169800	182713	200347	224064	245928	299933	651061	785226	709040	640711	640465

IRRIGATION YEAR 2014   TOTAL 161875083   MEAN 443493

Creating a Graph of the Data

You may create a graph of the data using the *Graph* option in the **Output** panel. The checkmark in the **All** checkbox of the **Output** panel indicates that you wish to create output for all of the sites/years you selected on the initial web page. If you remove the checkmark, a graph for only the site/year that is visible on the web-page will be created. The legend indicates the name and site-type of each dataset.
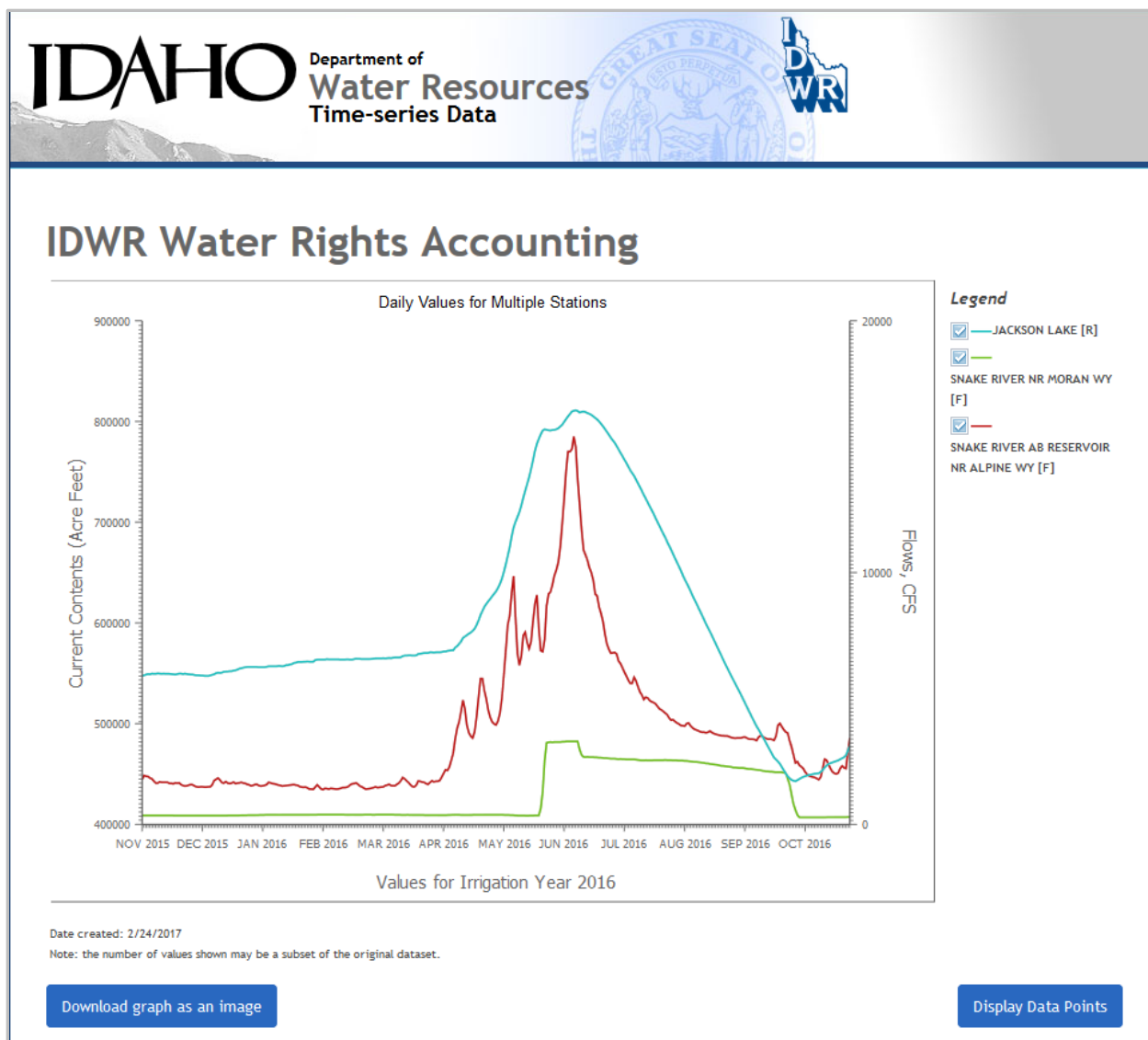
The graph shows in a new browser tab. You can save the graph as an image or turn on tooltips and data-point markers – using the **Display Data Points** button – which dynamically display data as you hover over the graph. Click the Legend's checkboxes to turn off/on the lines representing any of the sites. Note that the example shows flow-values from two sites and contents for a single reservoir. So, there is an axis for Acre Feet as well as CFS.
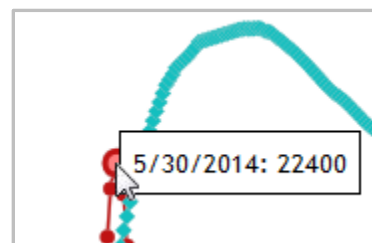
Getting Help

Each page has a **Help** button, located in the upper, right hand corner of the page. Since you are reading this manual, chances are that you have already discovered the **Help** dialog.

Initial Page

The Help dialog on the initial page of this application refers to this document and makes the user aware that they may not be able to download all of the information from the database at one time.
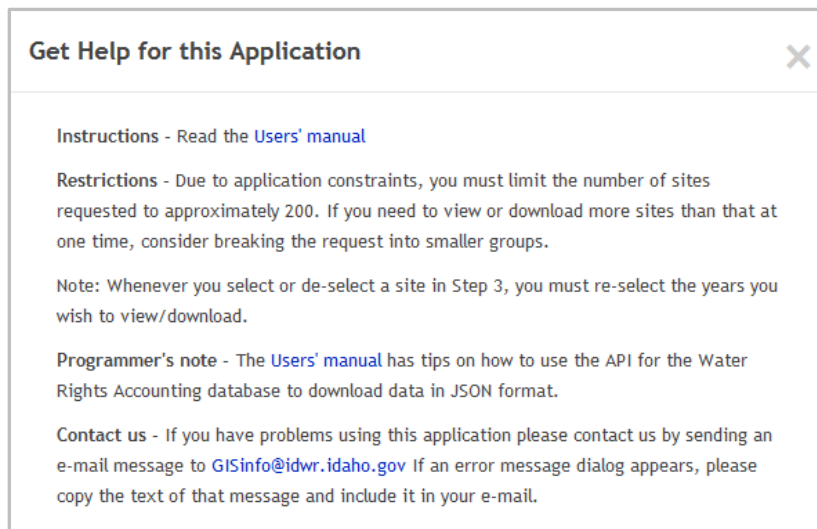
Report Page

In addition to making this users' manual available, the **Help** dialog tells you how to create a bookmark to return to the data you are currently viewing. For example,

https://research.idwr.idaho.gov/apps/Hydrologic/Accounting/Report?sitelist=13011000,13022500&yearlist=2015,2014,2013&yeartype=IY&hstalc=history

It also advises that detailed information about the IDWR's time-series APIs are available.

Appendix – API Reference

Requesting time-series data from the ***Water Rights Accounting*** API is very straightforward. The output product is always a ZIP-file contain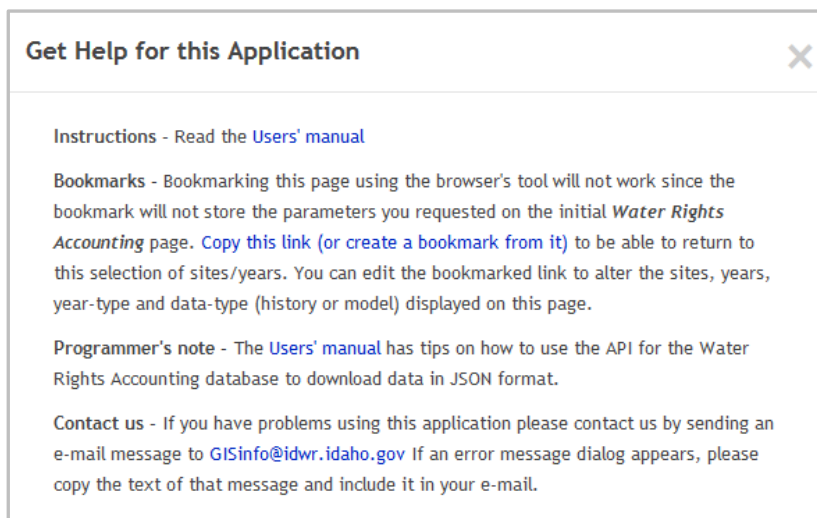ing the time-series data (and site details) in the format selected by the user; the default format is CSV. You can discover how to form the request-for-data by selecting the proper output format and using the bookmark tool, shown in the dialogs, in <u>Getting Help</u>, above. The bookmark tool composes a request to the ***Water Rights Accounting*** API similar to the following:

https://research.idwr.idaho.gov/apps/Hydrologic/Accounting/Report?sitelist=13011000,13022500&yearlist=2015,2014,2013&yeartype=IY&hstalc=history

WaterServices API

In addition to the ***Water Rights Accounting*** API, the ***WaterServices*** API delivers data in a much simpler form. Therefore, you must make requests to several operations in order to get the full view of the data, such as site name and the proper names of all of the values returned in the response.

The format in which you receive the response for requests is specified by appending the 'f' parameter to the request; JSON is the default response-format. If you specify 'f=csv' you will receive an uncompressed CSV-file. You may need to request the data in JSONP format (and supply a callback name) in order to guard against JavaScript security issues. If you specify 'f=jsonp&callback= somecallbackname' you can retrieve the data for use in an application. The response looks like:

```
somecallbackname([{"SiteType":"F","FieldName":"V1","Contents":"Flow","Units":"CFS"}]);
```

Download Time-Series Data from the WaterServices API

The response for the requested time-series data is an array of all of the records for each site/year combination present in the query. If no data is found for a particular site/year combination, no records are returned for that site, for that year. For history data, the request may return only the primary value ("V1") from the database. For accounting data, the response may contain several values – see <u>Request Field Descriptions</u>, below.

https://research.idwr.idaho.gov/apps/Shared/WaterServices/Accounting/History?sitelist=13010500,13011000,13022500&yearlist=2015,2014,2013,2012,2011&yeartype=IY

f=json
```
[{"SiteID":13010500,"SiteType":"R","JDate":"2010305","V1":646474.94,"V2":6760.92,"DataDate":"\/Date(1288591200000)\/","YR":2011},
{"SiteID":13010500,"SiteType":"R","JDate":"2010306","V1":646474.94,"V2":6760.92,"DataDate":"\/Date(1288677600000)\/","YR":2011},
{"SiteID":13010500,"SiteType":"R","JDate":"2010307","V1":646474.94,"V2":6760.92,"DataDate":"\/Date(1288764000000)\/","YR":2011},
{"SiteID":13010500,"SiteType":"R","JDate":"2010308","V1":646474.94,"V2":6760.92,"DataDate":"\/Date(1288850400000)\/","YR":2011},
{"SiteID":13010500,"SiteType":"R","JDate":"2010309","V1":646474.94,. . .
```

f=csv
```
"SiteID","SiteType","JDate","V1","V2","DataDate","YR",
"13010500","R","2010305","646474.94","6760.92","11/1/2010 12:00:00 AM","2011",
"13010500","R","2010306","646474.94","6760.92","11/2/2010 12:00:00 AM","2011",
"13010500","R","2010307","646474.94","6760.92","11/3/2010 12:00:00 AM","2011",
"13010500","R","2010308","646474.94","6760.92","11/4/2010 12:00:00 AM","2011",
"13010500","R","2010309","646474.94","6760.92","11/5/2010 12:00:00 AM","2011",
"13010500","R","2010310","646474.94",. . .
```

Request Site Details

The details for each site may be necessary for writing report headings or for linking to results from requests for time-series data. The only parameter is the list of sites for which you want details. This request returns a JSON array with the details for sites 13010500, 13011000 and 13022500.

https://research.idwr.idaho.gov/apps/Shared/WaterServices/Accounting/SiteDetails?sitelist=13010500,13011000,13022500

```
[{"SiteId":13010500,"SiteType":"R","StationName":"JACKSON LAKE","FullName":"JACKSON
LAKE","River":"SNK","ALCSiteType":"R"},
{"SiteId":13011000,"SiteType":"F","StationName":"TO MORAN","FullName":"SNAKE RIVER NR MORAN
WY","River":"SNK","ALCSiteType":"F"},
{"SiteId":13022500,"SiteType":"F","StationName":"MORAN TO ALPINE","FullName":"SNAKE RIVER AB
RESERVOIR NR ALPINE WY","River":"SNK","ALCSiteType":"F"}]
```

Request Field Descriptions

As with site details, the descriptions of each of the fields in the output dataset may be necessary for post processing. The column-heading and units used to report these data vary by site-type and by whether history or accounting data are being requested. This is a request for fields reported for "flows."

https://research.idwr.idaho.gov/apps/Shared/WaterServices/Accounting/HistoryFields?SiteType=f

```
[{"SiteType":"F","FieldName":"V1","Contents":"Flow","Units":"CFS"}]
```

The same request, made for 'sitetype=r' (reservoirs) returns four fields, meaning those four fields are in the time-series data:

f=json
```
[{"SiteType":"R","FieldName":"V1","Contents":"Reservoir Contents","Units":"Acre Ft"},
{"SiteType":"R","FieldName":"V2","Contents":"Surface Elevation","Units":"Feet"},
{"SiteType":"R","FieldName":"V3","Contents":"Evaporation","Units":"Inches"},
{"SiteType":"R","FieldName":"V4","Contents":"Precipitation","Units":"Inches"}]
```

f=csv
```
"SiteType","FieldName","Contents","Units",
"R","V1","Reservoir Contents","Acre Ft",
"R","V2","Surface Elevation","Feet",
"R","V3","Evaporation","Inches",
"R","V4","Precipitation","Inches"
```
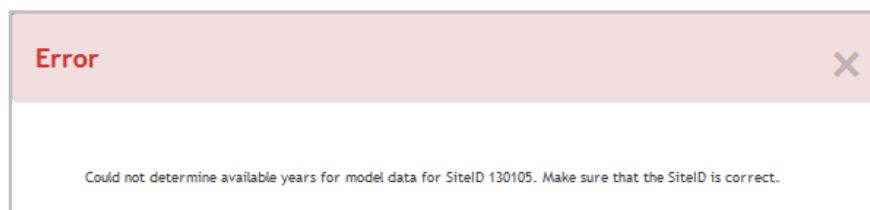
Using Mobile Devices

This application is designed to be used on any "personal computer," from large desktops to smart phones. However, the interaction between the user and the interface varies widely with the size, resolution and type of hand-held, touch-capable devices, be they cell phones or tablets. It has been tested on Android tablets and phones. It works on iOS devices from the iPhone 3, forward. The Opera browser is not recommended on iOS devices. The application has not been tested on Windows phones except to ensure basic functionality.

The mobile-device gesture-related terms are meant to be synonymous with desktop navigation. Where this document instructs you to "click," you must "touch" or "tap" your mobile device.

Handling Errors

If you submit requests by specifying parameters from the browser's address bar, you may see a message that your request was not properly formed.

Error   ✕

Could not determine available years for model data for SiteID 130105. Make sure that the SiteID is correct.
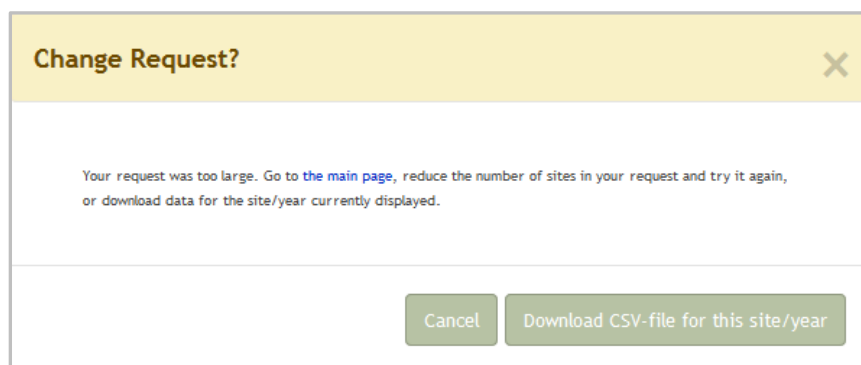
Try the request again. You should not encounter this type of error when the **Report** page is displayed after selecting the sites and years to view/download from the application's initial page.

Browser Incompatibility -- Internet Explorer

If you use the Internet Explorer browser, make sure that Idaho.gov is not listed in the websites you've added to *Compatibility View* pane in IE's *Compatibility View Settings*. See Microsoft's web-site for details: http://windows.microsoft.com/en-us/internet-explorer/use-compatibility-view#ie=ie-11-win-7

Large Requests

The type of request made to the server allows a maximum of approximately 200 sites. You can view data for all of the sites, for all of the years by supplying a river-system name, as explained in Requesting to View All Data for a River. That kind of request restricts you to downloading or graphing data for the single site/year combination you are currently viewing. You will be given options when requesting data.

Change Request?   ✕

Your request was too large. Go to the main page, reduce the number of sites in your request and try it again, or download data for the site/year currently displayed.

Cancel   Download CSV-file for this site/year

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Final Thoughts

Cookies

The information collected and passed from one page to another is stored in local storage on your PC, Mac or hand-held device. You must have cookies enabled in order to use this application. Although you may use the browser's "Back" button to go the previous page, you may cause the application to loose any selections you made on the page you are leaving.

Contacting IDWR

If you have any problems with this application, or have questions not answered by this document, you can contact the IDWR using the information shown below. Please provide the address of this web-page – https://research.idwr.idaho.gov/apps/Hydrologic/Accounting.

Please include your telephone number and browser name/version when requesting assisstance. If you are using this application on a mobile phone or tablet, please include that information. Comments on how to make this application better are welcome, of course.

For comments and questions concerning this application send an e-mail message to HydroInfo@idwr.idaho.gov or call the telephone number shown below:

<div align="center">

Idaho Department of Water Resources
The Idaho Water Center
322 East Front Street
PO Box 83720
Boise, Idaho 83720-0098
Phone: (208) 287-4800
Fax: (208) 287-6700

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