



## **Data and Data Migration Considerations**

## Contact SPECIES360 Support

The purpose of this document is to explain several key differences between data in ZIMS 2012 versus data in ARKS and ZIMS 1.x. These differences exist for a few reasons, including: bugs that existed in ARKS or ZIMS 1.x that are resolved with ZIMS 2012, enhancements in how ZIMS 2012 processes data, and decisions to improve the quality of data, as best po ssible. This is a "living document," and we plan to update it as we find new items during and after User Acceptance Testing (UAT) is complete. However, it should serve as a vital reference tool for your testing and use of ZIMS 2012. How much of my animal data was migrated into ZIMS 2012? SPECIES360 has migrated nearly 100% of each institution's data from ZIMS 1.6 and/or from ARKS. We have found ways to migrate even many damaged records occasionally found in ARKS. For those of you coming to ZIMS 2012 from ARKS, ZIMS 2012 is better at capturing critical animal data, and ZIMS' 2012 Inventory Reports fix several long-standing ARKS errors. For those of you coming to ZIMS 1.6, you will find many animal data and report improvements in ZIMS 2012, in addition to speed. We recommend you read through the following and act on any step relevant to your institution and your own animal data.

**Current users of ZIMS 1.6** may encounter some animal transactions that need to be cleaned up in ZIMS 2012. We have carefully re-migrated the last ARKS dataset you sent to SPECIES360 and added on top of that historical base of animal data, just the animal records you have edited in ZIMS 1.x. This is a complex combination process, and we are debugging it with your help during UAT. If you reverted back to ARKS from ZIMS R1.x, you may see duplicated data because of this. As of 6 March we are also aware of two data-migration issues going from ZIMS 1.6 to ZIMS 2012 which we are working on now (incorrect parent % and some missing ownerships). We will work to resolve these and others as part of our on-going development efforts and updates to ZIMS 2012.

**Groups that may have scientific names not recognized-by-SPECIES360**, or damaged scientific names. Please run a taxon report, 1800-today, with taxon = Animalia, being sure to uncheck include lower level taxonomy. This will give you a list of any groups you have recorded, whose taxonomic name was unrecognized or damaged in SPECIES360 legacy systems (we found some groups with unreadable names in SPECIES360' central database). These groups were migrated into SPECIES360 ZIMS 2012 as "Animalia" since SPECIES360 doesn't know what they are. You will be able to fix these in ZIMS 2012 once you are live by looking them up in ARKS or your paper records, find them in ZIMS 2012 (enter GAN at upper left), then on the Details tab – at lower right is a Taxonomy/Sex Type/Collection grid, open it up and select the Action "Taxonomy Change Event" and enter a scientific name recognized by SPECIES360.

**Possible re-appearance of animals or groups deleted in your ARKS system**. SPECIES360 is being cautious and making sure your data is fully migrated. We have found a small number of animals, and a larger number of groups, which are recorded in SPECIES360 4 (SPECIES360' legacy central database) but are no longer found in your ARKS system. Some of these may represent old "deletion bugs", but we want to err on the side of keeping ALL your data, so these "orphaned" data from SPECIES360 4 central database were migrated into ZIMS 2012 and you have the option of closing the groups or deleting either groups or animals as necessary.

**Group counts** – ZIMS (unlike ARKS) bases group counts on the last census before the report date. ARKS added up the numbers from all recorded group events to calculate the census as of a given date. Experience with ARKS 4 and real group

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data over some years showed that this mathematical calculation turned out to be a bad approach – in the real world, many group events go unrecorded, and ARKS group counts went negative (!) when more deaths and dispositions were recorded than births and acquisitions (plus the number in the last census). We have found other bugs and errors in ARKS group count handling, which have been fixed in ZIMS 2012. Groups with negative or zero group counts in ARKS data were migrated into ZIMS as zero, and the group status set to "Open". Also to note, group splits and merges are not shown in the inventory report acquisition or disposition event columns in ZIMS 2012. Also a caution that depending on how often group census counts were performed and entered, the ZIMS inventory report use of the most immediately-previous census count(s) before the report start and end date may give you counts from some time ago.

Groups are "Alive", "Open", or "Closed" in ZIMS. Live groups have one or more animals in them. Open groups have census of zero, but have been left open for possible reuse (don't do this if you expect to ever track the genetics of the group, but users requested this option for goldfish "groups" in goldfish ponds, etc). Closed groups have a final census of zero and are closed by the user, not to be re-used (this is a best practice). ARKS did not always make these distinctions - some groups were deleted in ARKS as a way to "close" them, and you may find zero-count groups in ZIMS2012 which had been "deleted" in ARKS. If so, just close them.

All in-on-loan animals will have Undetermined physical vendor for now in ZIMS 2012, with the owner the same as always. SPECIES360 legacy ARKS software captured the owner as the "vendor" for loan-in transactions – the "vendor" field held the owner - that the animal was in on loan to you from. However, ARKS did not capture information about the physical source of the animal, which sometimes was not the owner (example – Golden Lion Tamarin owned by the Brazilian Government, sent to you as a Loan Transfer by Zoo X. Your ARKS record shows the animal in on loan from the Brazilian Government. Your physical source for this animal, Zoo X, was not recorded in your ARKS data). ZIMS 2012 has complete logical separation of physical history from ownership history. This is a much cleaner design, and ZIMS now captures both the owner and the physical source of the animal (in case it is different) for loan-in and related acquisitions. Migrating institution-by-institution data from ARKS into ZIMS 2012 did not offer a reliable way to fill in (the previously not recorded) physical vendor for you, so these have been left as "Undetermined" in ZIMS 2012. We plan to build a tool that should be able to accurately fill in many of these for you, using the preceding transactions from other institutions. Meanwhile, the Vendor recorded for ARKS loan-in transactions was migrated into ZIMS for you, as the Owner, and the physical source left Undetermined. No ARKS information has been lost, just made clearer.

**Taxonomy** – your custom-entered taxonomic synonyms from ARKS are migrated into ZIMS 2012. However, custom taxonomic sort order setting from ARKS is not implemented in ZIMS 2012 at this time – taxonomic sort order in ZIMS uses the global SPECIES360 taxonomic list sort order.

**Inventory Report Comparisons**. SPECIES360 staff have made extensive comparisons of inventory report results from ARKS versus the same institutions' data re-migrated into ZIMS 2012. The starting and ending counts of animals on inventory match approximately 99.9% for most institutions. Doing such comparisons also brought to light some "historical oddities" in the way ARKS Inventory Reports counted events (births, acquisitions, dispositions, deaths). ARKS and ZIMS 2012 show net animal events – so a single animal that was acquired and dispositioned and acquired again during the report period, was counted by ARKS and is counted by ZIMS 2012 as (net) one acquisition However, ARKS handled Missing and Release to Wild as special cases (not generally counted but displayed), and we found some bugs in the ARKS logic as well (where ending counts of individuals could even go negative  $\Lambda$ ). ZIMS 2012 Inventory Reports clean up these ARKS peculiarities. To see all Missing or Release to Wild transactions, run a Transaction Report and select these transaction types. ZIMS2012 counts animals at the beginning of the report period and animals at the end. The columns in between

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count and show the net-animal changes. Missing and Release to Wild transactions are dispositions, and are now considered as such. For individuals (not groups), the inventory report rows add across. This is much more straightforward than in ARKS. It does mean that counts of acquisitions and dispositions may be higher in ZIMS2012 than in ARKS, because ZIMS2012 counts them all. ZIMS 1.x inventory reports had several problems, making comparison with those not very helpful.

Any "Do Not Send to SPECIES360" animals in your ARKS system were migrated into ZIMS 2012 into the Research Collection, set to "local" only. Most institutions do not have such animals – or have one or two (probably accidentally set). However, any such animals found in ARKS are migrated into ZIMS 2012 so they are NOT visible in ZIMS, outside of your institution – by migrating them into a Research Collection and automatically setting that Collection to "local". SPECIES360 Board Policy as of 2012 allows such animals to be recorded in ZIMS with their existence not visible externally (their collection set to "local"), but this option is restricted to Research or Feedstock Collections. Specimen reports for these animals will document that they are not visible to the SPECIES360 network. A main function of SPECIES360 is to provide the most comprehensive possible overview of zoological populations, so ALL main collection animals and their minimal basic information are visible to other SPECIES360 members.

**Inventory Report resolution** – ARKS split out inventory report rows for animals recorded as a domestic breed, as well as subspecies, when report resolution was set at subspecies level. ZIMS splits out breeds as separate rows only when the inventory reports are set to breed level resolution.

Very old (1753) dates. Should you encounter a date of 1753-01-01 in ZIMS 2012 it usually means that a blank or "placeholder" date was found in your data, such as 1601-01-01, a date sometimes found ARKS datasets as Foxpro's "placeholder". When this happens the date in ZIMS is set to 1753-01-01 which is the earliest date that the ZIMS database of SQL Server can use in a 'datetime' data field. However, we may consider a change to present such dates as "Undetermined" in the future.

**Data Standards**. SPECIES360 is launching ZIMS 2012 with the user-community-developed data standards in the application – just as they were provided to SPECIES360. These new standards represent an enormous amount of effort by hundreds of volunteers from the zoo and aquarium community worldwide, and standardize more than 315 data types – about tenfold more than previously. Now that these Data Standards can be seen in context in the ZIMS application, there are some which obviously need clarification or cleanup. We plan to polish these data standards later this year after ZIMS 2012 release 1 planned functionality is in place .

**Conflicting animal data**. With ZIMS integrated real-time view of animal information, conflicting animal data should be much less common. However, migrated data from the past and occasional differences in promptness of recording, etc., going forward, may generate data conflicts. We are working to show the more important conflicts in red, but this will take time.

**Group transactions** with external institutions are now true acquisition and disposition, external transactions, when entered into ZIMS2012 – and newly-entered groups can now be traced from one institution to another. However ARKS groups transactions were weakly structured. Their census adjustments have been migrated as numerical data about the group, but the external transaction details have been migrated into ZIMS 2012 as notes to the group.

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**Duplicated observations**. There are cases where the observation came in from ARKS (is a note in ARKS) and the user edited/updated something on the observation via the ZIMS 1.x interface. If any of the significant information has been modified (i.e. Observation Type, Observation Subtype, Observation Date) then the migration process is not able to match the records between ZIMS 1x and what came into 2012 from ARKS (EDU process). This means that the observation will likely be duplicated in ZIMS 2012.

For duplicated comments: When trying to detect duplicate comments between ZIMS2012 (ARKS data from EDU) and ZIMS 1.x, the body of text entered is one of the criteria that is compared. If the comment was created or modified in ZIMS 1x, the comment sometimes has embedded HTML codes in it, which causes the body of the text to be different in the comparison. Therefore, both records are allowed in, which appear as duplicate notes.

## Revised 10 August 2017 \* Species360 Organizational name change added on 07/18/2016