



Coaching Spatial (Mapping) Information Project

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Coaching Spatial (Mapping) Information Project: Introduction

- To provide a computer / web-based spatial methodology (Geographic Information System or GIS) that provides the ability to analyze NCCP training and certification database records through the application of a spatial analysis process.

- The goal is to provide sport organizations, education agencies, clubs and leagues the ability to spatially map and relate attribute information about a specific location.



Coaching Spatial (Mapping) Information Project: Geographic Information Systems (GIS)

- GIS are computer-based systems that are used to store and manipulate spatial information, as well as integrate the spatial data with their related attribute (database) data.
- SIMPLY PUT, a GIS combines layers of information about a place to give you a better understanding of that place. What layers of information you combine depends on your purpose, such as finding the best location for a new store, analyzing environmental damage, viewing similar crimes in a city to detect a pattern, and so on.



GIS software organizes spatial data in a thematic approach that categorizes data in vertical *layers*.

QuickTime™ and a TIFF (Uncompressed) decompressor are needed to see this picture.

The definition of layers is fully dependent on the organization's requirements.



Hockey Coaching Data Example

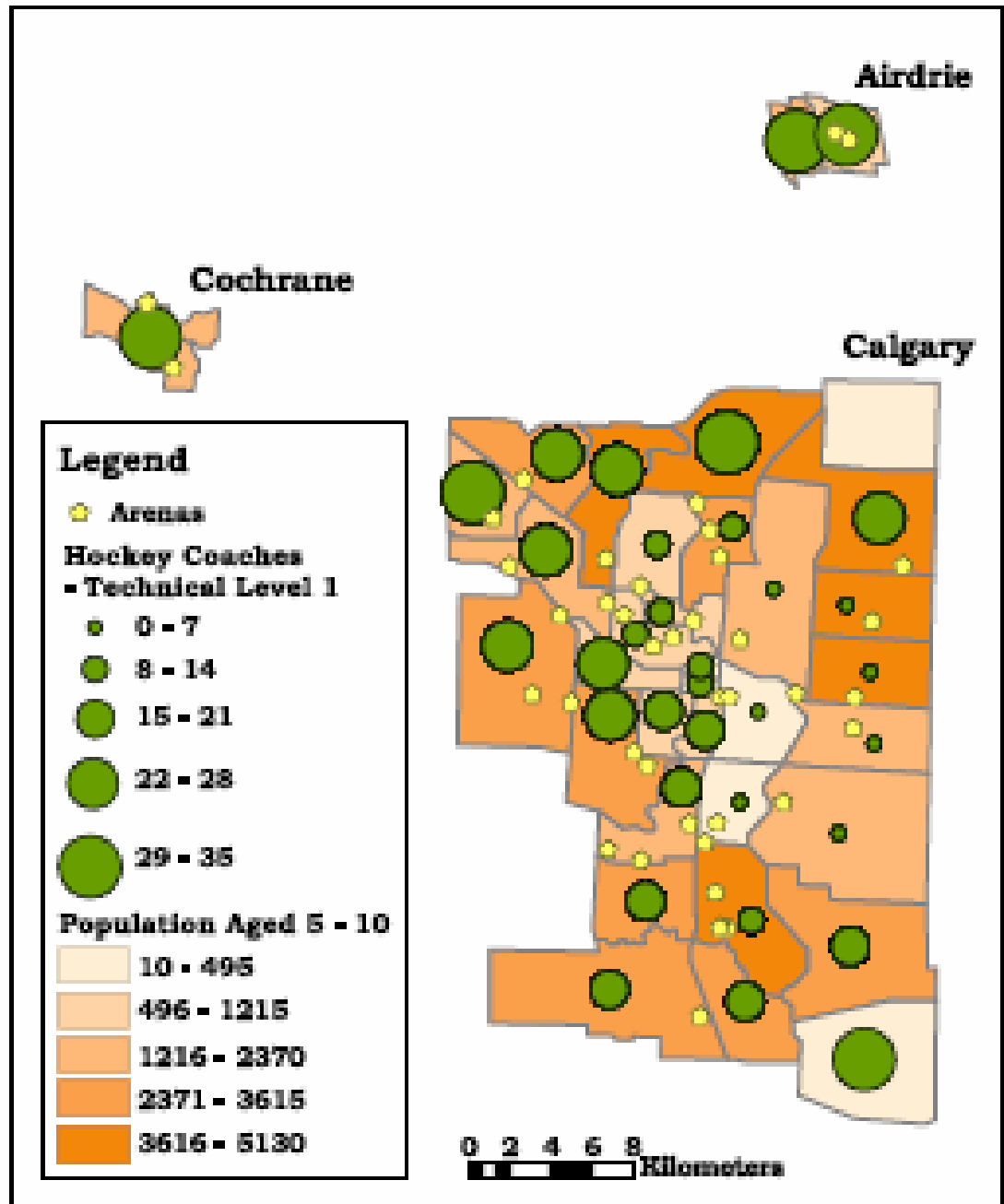
Distribution of Level 1 to 3 Hockey Coaches in Relation to Demographic Distribution of Potential Athletes

- 3 spatially (mapped) representations of coaches for Level 1, 2, and 3
- Coaches mapped by thematically represented groupings (Visually informative)
- Age groupings thematically represented with:
 - lighter colour = smaller numbers
 - darker colour = larger numbers
 - 5 demographic size ranges
- Arenas within Calgary and surrounding area
- Definition of Level 1, 2 and 3 Technical Coach, as defined by Hockey Canada

Technical Level 1 (Tech 1):

Tech 1 is referred to by Hockey Canada as the Coach Level.

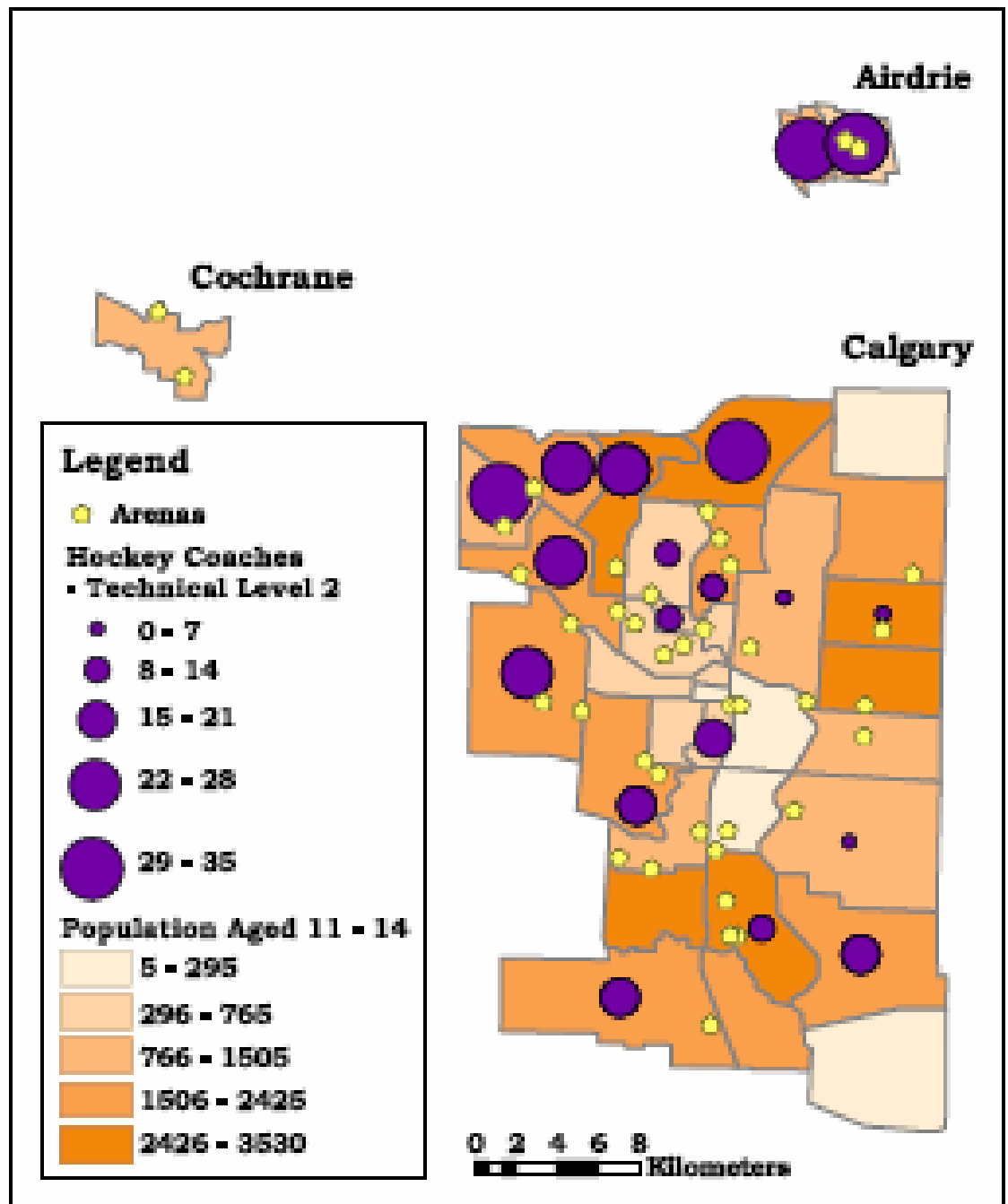
The majority of coaches at this level will coach players in the 5 to 10 year old age group.



Technical Level 2 (Tech 2):

Tech 2 is recognized by Hockey Canada as the Intermediate Level.

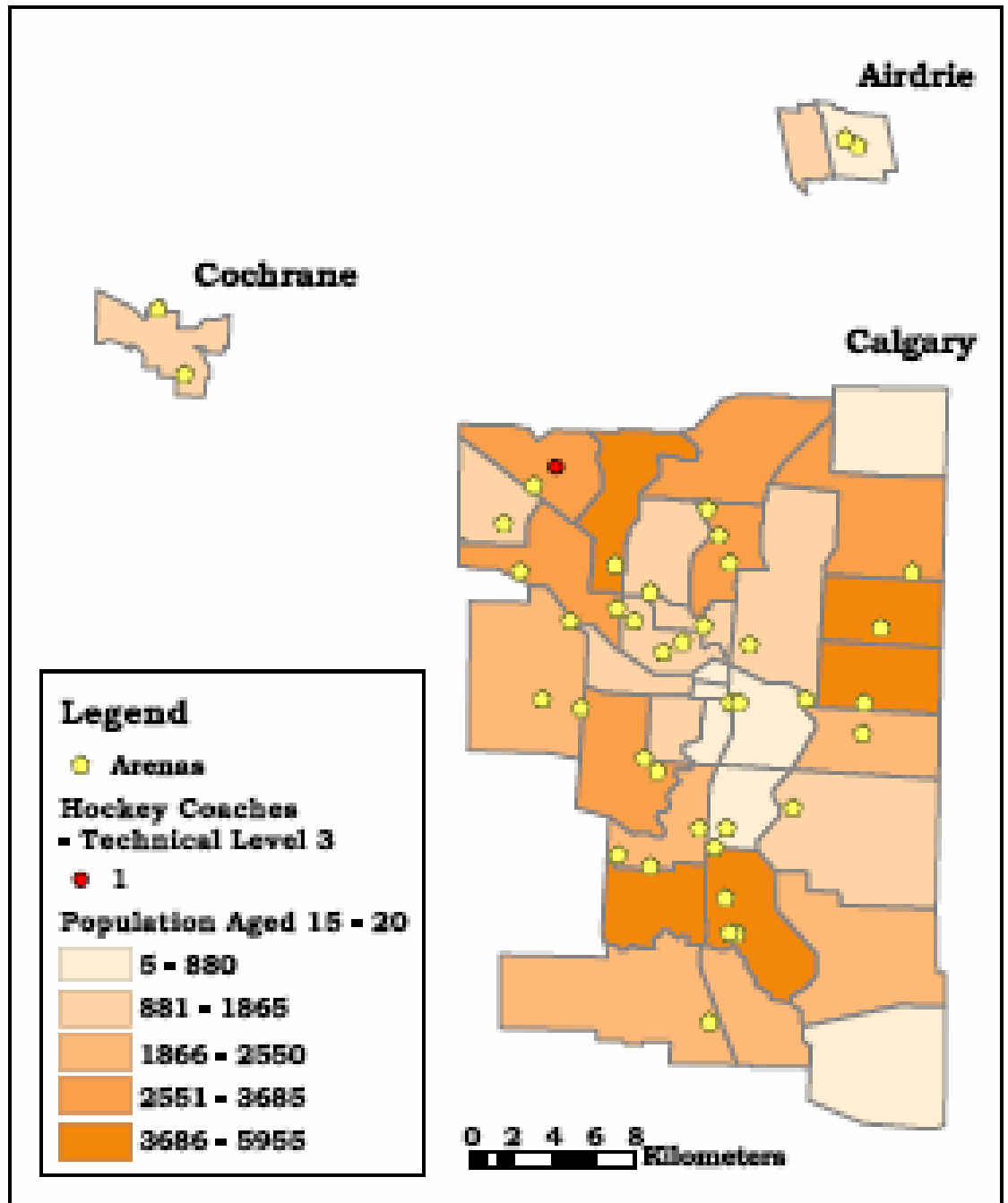
Coaches at this level will coach players in the 11 to 14 year old age group.



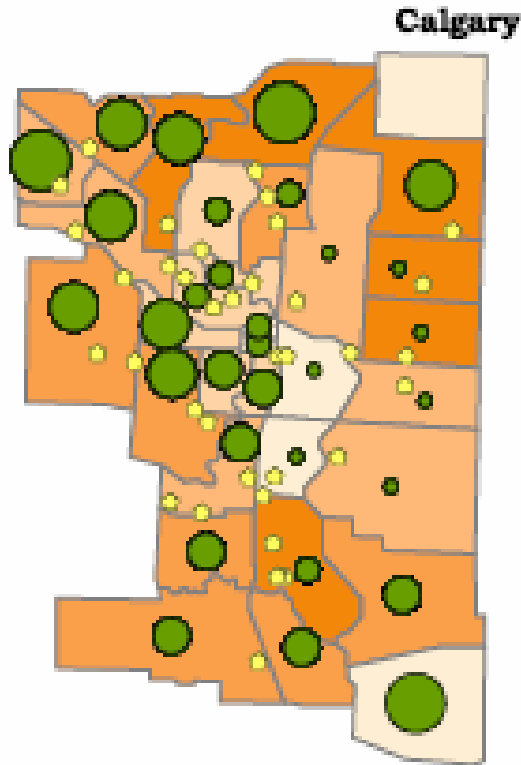
Technical Level 3 (Tech 3):

Tech 3 is referred to by Hockey Canada as the Advanced Level 1.

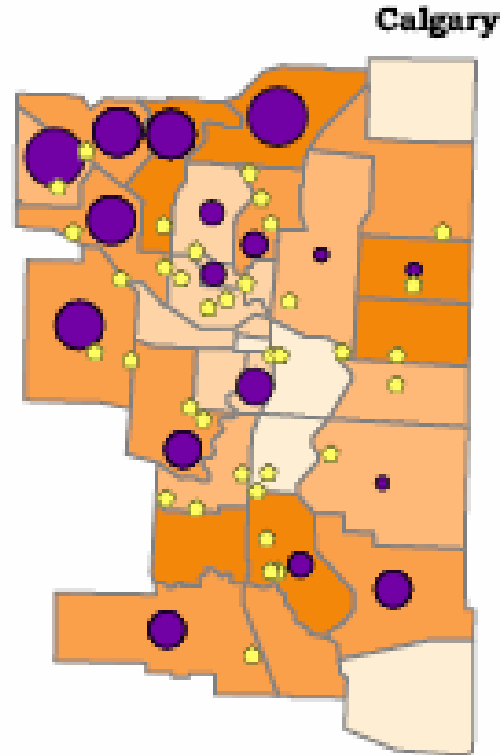
The majority of coaches at this level will coach players in the 15 to 20 year old age group.



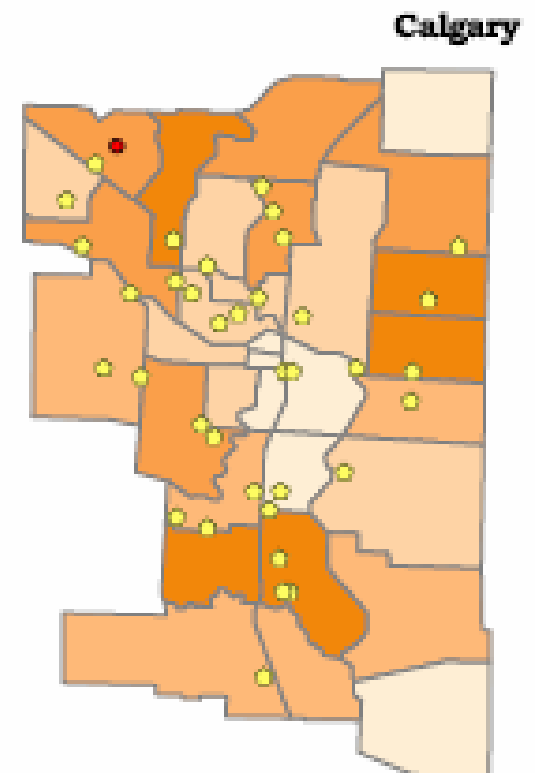
Level 1



Level 2



Level 3



Spatial and Attribute Comparisons

- Changes between levels
- Areas requiring resources
- Accuracy of data





Coaching Spatial (Mapping) Information Project: Application to NCCP Data

Pre-CBET

- NCCP ID
- Last Name
- First Name
- Gender
- Birth Date
- Street
- City
- Province
- Postal Code
- Phone
- Sport ID
- Sport Name
- Course Name
- Course Level
- Course Type
- Language

CBET

- NCCP ID
- Last Name
- First Name
- Gender
- Birth Date
- Street
- City
- Province
- Postal Code
- Phone
- Language
- Status
- Date Certified
- Context ID
- Context Name
- Stream ID
- Stream Name
- Discipline ID
- Discipline Name
- Sport ID
- Sport Name

Having now demonstrated the use of the GIS tool in representing the hockey data, it is now possible to view the GIS tool from its capability as an analytical tool in applying coaching information.

As already discussed to some degree, the significance of the GIS tool is that it provides the user a number of options in how data can be interpreted from its spatial representation combined with its depth of detail of attribute information attached to each spatial component (ie. Point, line or polygon representation).



Coaching Spatial (Mapping) Information Project: Outcomes

- As a result, using GIS, one can see the distribution of coaching resources, their education level and how this data is related to the location of sport and community facilities and population statistics including age demographics.
- The potential now exists to add a variety of related census information (as layers of data) to provide additional analytical assessment of coaching resources and other potential applications such as marketing and club or program development potential.



Coaching Spatial (Mapping) Information Project: Application to NCCP Data

Census Information to be applied to the CAC - NCCP GIS Sport Project:

Male/Female demographic breakdown and tied to boundary locations

Income Groupings

Married Couples with Children at home

Lone Parent Families with Children at home

Languages

Migrant Statistics

- Total population 1 year and over by mobility status
- Total population 5 year and over by mobility status
- Total population by citizenship
- Total population by immigrant status and place of birth
- Total immigrants by selected places of birth
- Total recent immigrants by selected places of birth
- Total immigrant population by period of immigration
- Total immigrant population by age at immigration
- Total population 15 years and over by generation

Total population by Aboriginal and non-Aboriginal

Change over time - 1996, 2001, 2006, etc.



Coaching Spatial (Mapping) Information Project: Application to NCCP Data

- The census information provided is only a very small component of the information available in a GIS context. This type of data can assist the user in considering immigration implications on coach education and coach resource distribution, location of programming with respect to the spatial analysis of various age groups. For example, larger potential focus groups that best fit the long term athlete development process.
- Having demonstrated the benefit of adding to the analytical potential of applying GIS with the addition of spatial data resources, one must also consider whether this remains a tool available to the CAC internally, or if the GIS application be made available to its client base.



Coaching Spatial (Mapping) Information Project: Summary

- The GIS information as represented in the figures in this presentation and the additional analytical potential of data, such as Census Canada data, can all be made available through web based GIS tools that could be managed through the CAC.
- Although managed with respect to data access levels, hence protecting proprietary data, the web based GIS tool can allow the client user to not only access and analyze data for their own purpose, but can also provide this new information resulting from client interpretation, back to the larger CAC pool of data.
- The data provided and the capabilities presented with respect to spatial analysis of this data, additional merging of related data sets and finally methods through which to allow the maximum reach to the client user form the “next steps” decision process in implementing such ideas.



Coaching Spatial (Mapping) Information Project: Questions

Thank you for Your Attention!

Questions?