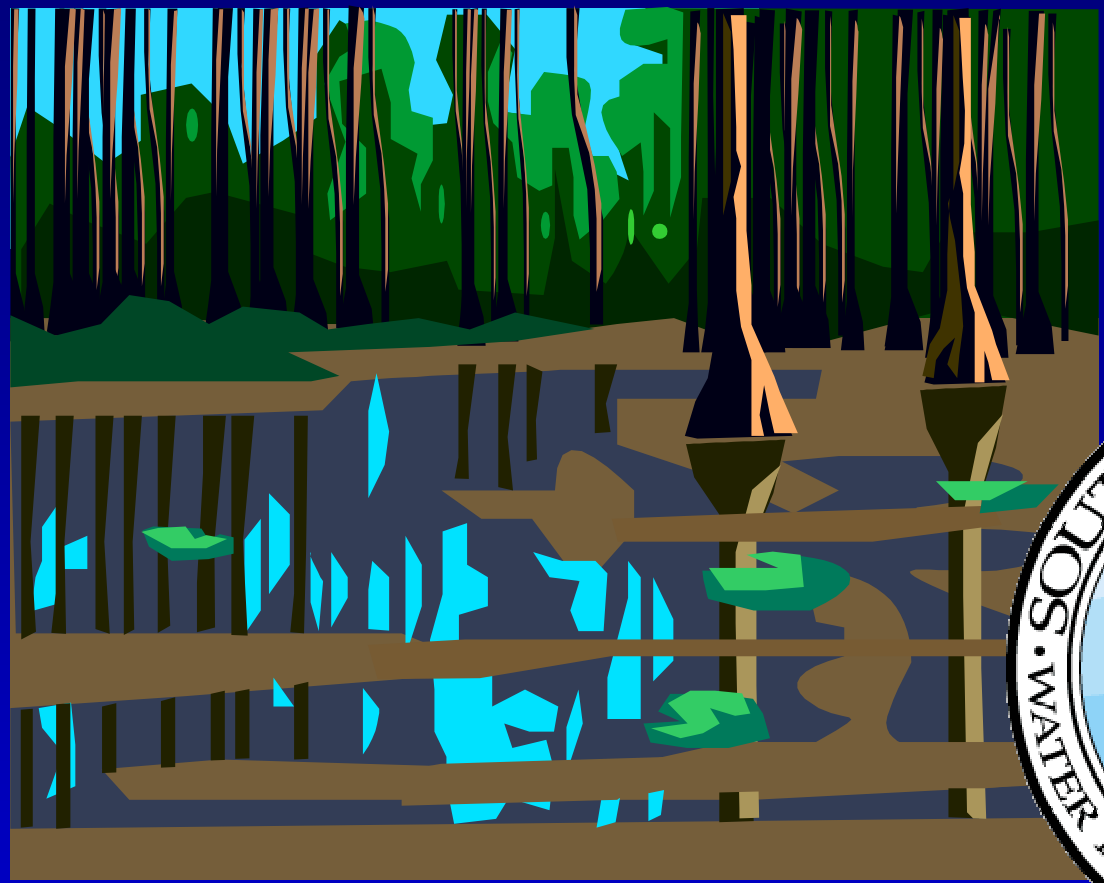
District Review of the Wetland Assessment Procedure (WAP)



SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Purpose of the WAP Analysis

- EMP monitoring
- Developing MFL methodologies
- Monitoring long-term wetland health
- Assessing Recovery

WAP assessment began in 2000

- Phase 1 - gather all data and place in database
- Phase 2 – initial assessment of data, identifying differences in scores, evaluations, etc., and suggest reasons
- Phase 3 - evaluate and improve methodology

WAP ANALYSIS

A Review of the WAPs collected during Calendar Years 2000, 2001, and 2002

What has been done so far

- WAP scores from 57 cross-over sites have been entered into a database
- Differences between the WAP format and how the forms were filled out have been noted
- WAP scores have been plotted over time
- Tables of equivalent WAP scores have been generated
- Differences between the data reported on the WAP field forms and on Annual Reports have been noted.

Cross-Over Site Database

- 57 wetlands have been labeled as “Cross-Over” sites because they have been assessed by both the District and TBW consultants during the same time period
- Quantitative data from the “Cross-Over” sites have been entered into an Access database

Cross-Over Sites and Associated Wellfields

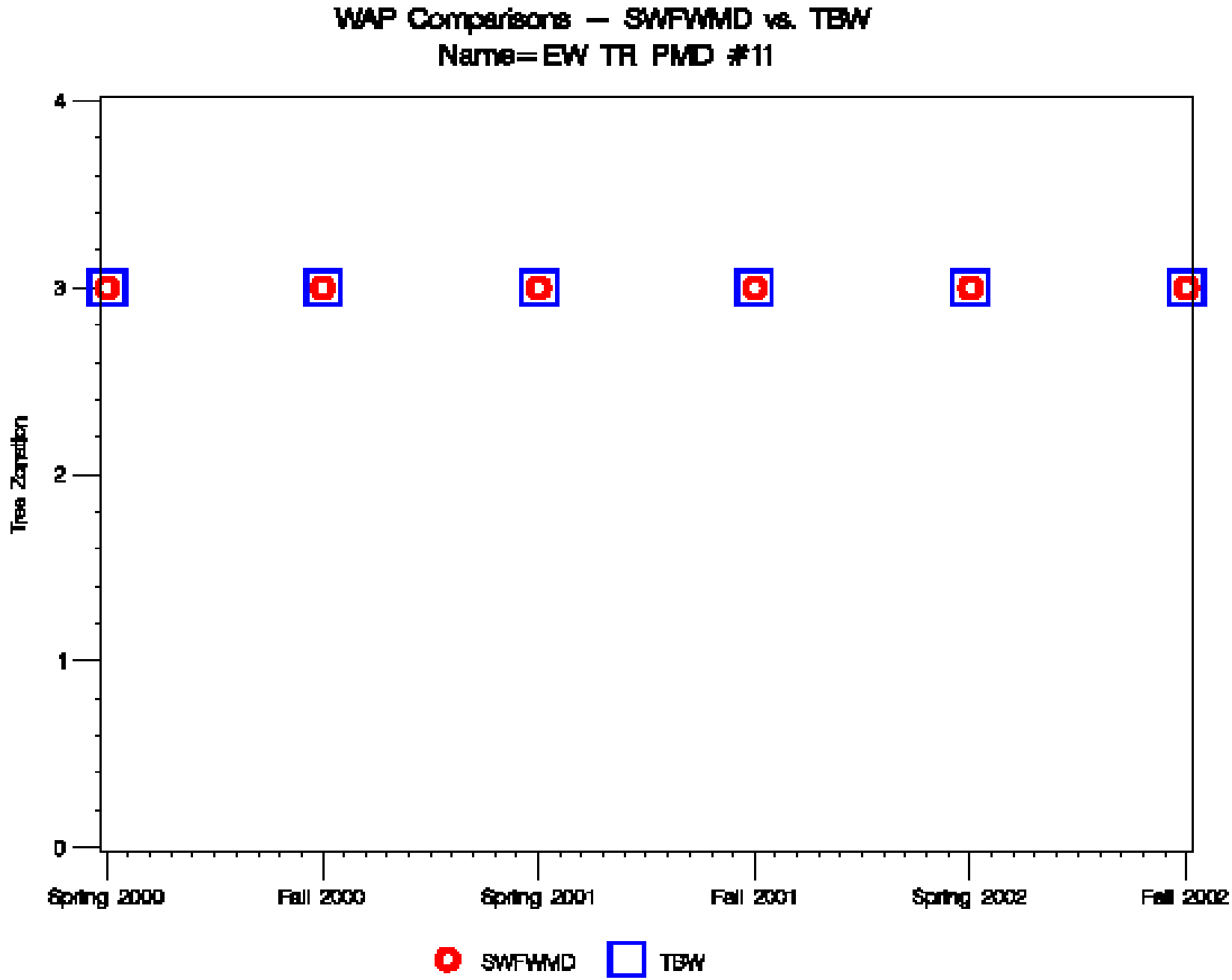
Cypress Creek	13
Cosme	1
Cross Bar	1
Eldridge Wilde	8
Morris Bridge	7
Northwest Hillsborough	1
South Pasco	4
Starkey	22

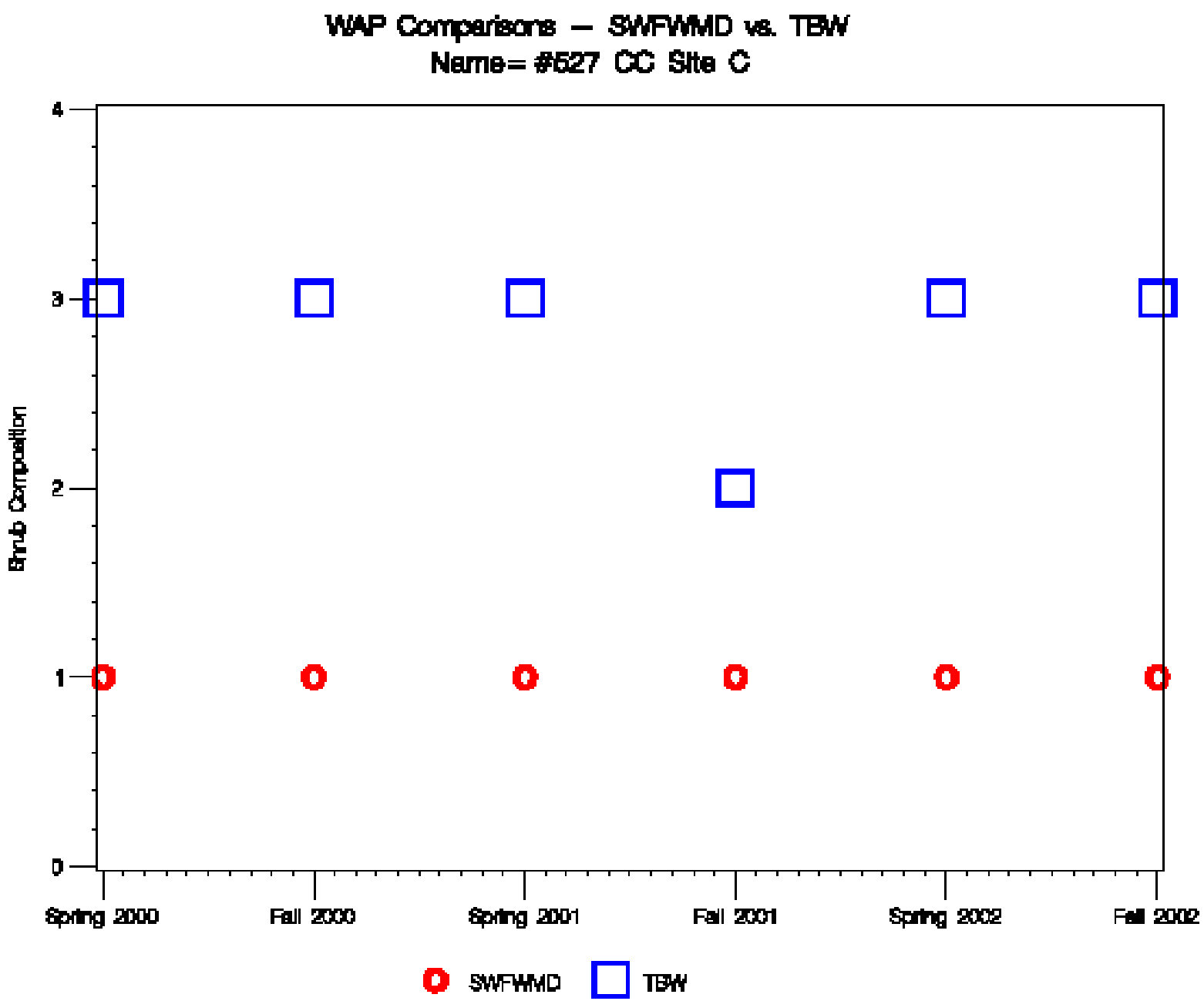
Differences noted during database construction

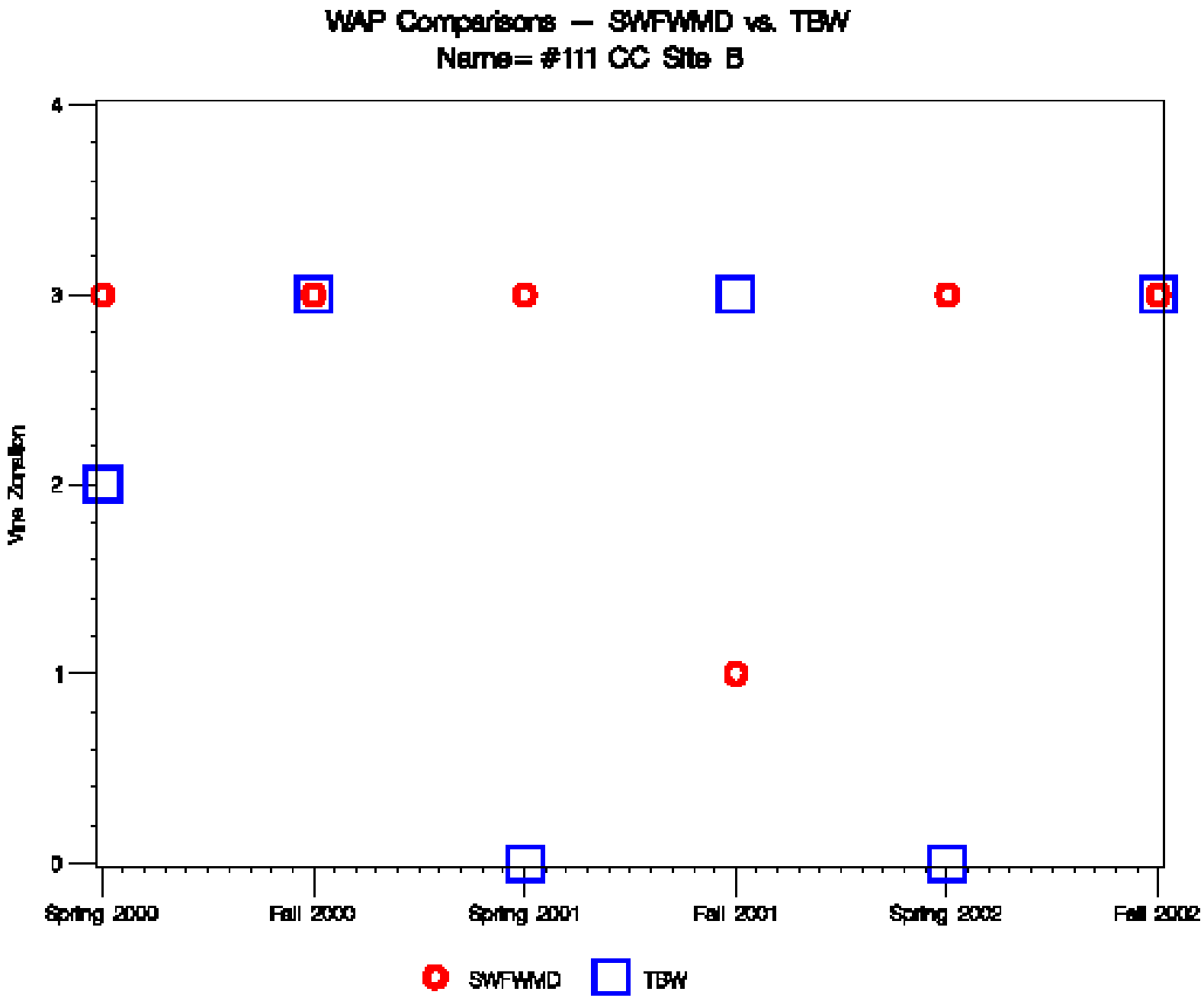
- Several different variations of the field form
- Many categories were often left blank or not completely filled out
- Apparent differences in the interpretations of how to score soils, determine zonation, and when it is applicable to use N/A or fractions

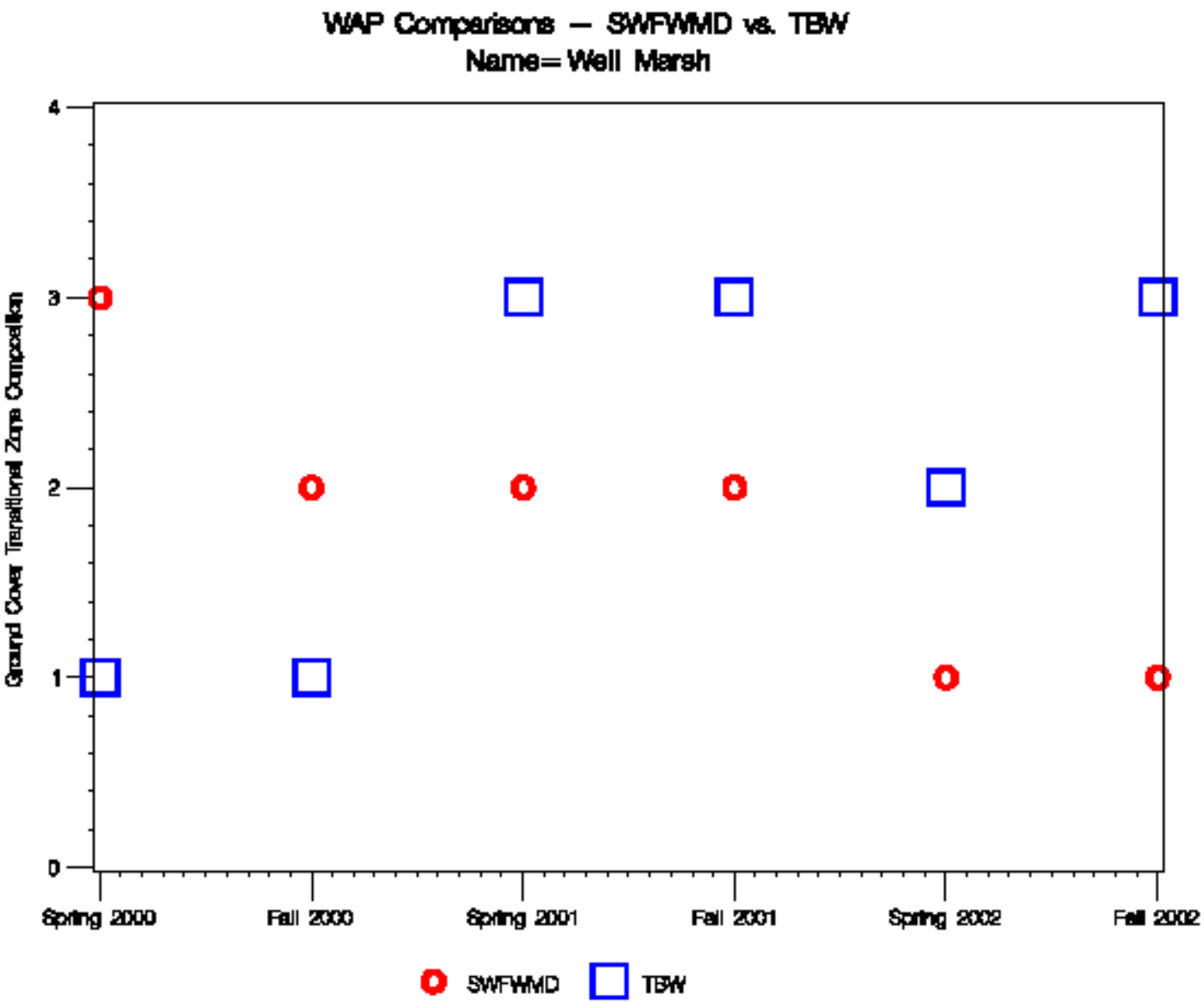
Scatterplots to examine variability

- A set of scatterplots was produced for each of the 57 cross-over sites and each of the major WAP categories
- The District and TBW consultants scores were plotted over time – each agency given a different symbol
- Following are some examples


WAP Comparisons — SWFWMD vs. TBW
Name=EW TR PMD #11
Tree Zagnation
4
3
2
1
0
Spring 2000
Fall 2000
Spring 2001
Fall 2001
Spring 2002
Fall 2002
SWFWMD
TBW


WAP Comparisons — SWFWMD vs. TBW
Name= #627 CC Site C
Grub Composition
4
3
2
1
0
Spring 2000
Fall 2000
Spring 2001
Fall 2001
Spring 2002
Fall 2002
SWFWMD
TBW


WAP Comparisons — SWFWMD vs. TBW
Name= #111 CC Site B
Virus Zonation
4
3
2
1
0
Spring 2000
Fall 2000
Spring 2001
Fall 2001
Spring 2002
Fall 2002
SWFWMD
TBW


WAP Comparisons — SWFWMD vs. TBW
Name= Well Marsh
Ground Cover Transitional Zone Comparison
4
3
2
1
0
Spring 2000
Fall 2000
Spring 2001
Fall 2001
Spring 2002
Fall 2002
SWFWMD
TBW

Tabulated Percentage of Equivalent Scores

- 284 instances where both the District and TBW consultants assessed a cross-over wetland during the same season
- Percentage of equivalent instances and number of higher instances were tabulated (See Table 2 for details)

Results and Examples

- For 12 of the 27 categories – the District and TBW consultant were in agreement more than 60% of the time
- For most categories:
  - The TBW consultant assigned a higher score than the District
  - The District was more likely to leave a category blank

	Percent the Same	TBW # Higher	TBW # Blank	SWF # Higher	SWF # Blank
GC Deep Zone Composition	67%	75	0	19	3
GC Transitional Zone Composition	40%	120	1	49	6
GC Species Zonation	47%	112	2	39	6
Weedy GC Composition	62%	70	0	39	2
Shrub Composition	41%	108	3	59	2
Shrub and Small Tree Species Zonation	44%	100	0	58	0
Weedy Shrub Composition	63%	18	0	86	2
Vine Zonation	66%	66	1	31	1
Tree Composition Appropriate for Wetland Type	74%	41	0	34	1
Current Water Level Indicators	46%	104	6	48	2
Cultural Indicators of Lake Water Levels	96%	8	0	3	8

Additional Results and Examples

- Instances were also grouped by Wetland Type (Table 4) and TBW consultant (Table 3) to determine if one particular group was more likely to yield an equivalent score
- There did not appear to be less variability when instances were grouped by Wetland Type or TBW consultant

Separate But Related Comparison

- Data reported in the TBW Annual Reports were compared to data recorded on the 2002 WAP field forms
- Several cases where data did not match
- Not apparent if differences were due to typo's or they were a reflection of adjustments that are done to the scores after a review of the assessment

Variability between the Wetland Assessment Procedure of the Cross-Over Sites

Factors Affecting Most WAP Criteria

- Choice of transect within wetland
- Normal pool establishment and transect dimensions
- Plant identification (species I.D. and wetland affinity category)
- Ability to judge percentages

Factors Affecting Most WAP Criteria (continued)

- Early versus late season effects
- Seasonal variability
- Historical experience
- Professional experience
- Lack of comments

Ground Cover Deep Zone Composition

- See previous categories

Ground Cover Transitional Zone Composition

- Same as previous, plus….
- Filled or partially filled transitional zone
- Long-term impacted (dry) transitional zone

Ground Cover Species Zonation

- Same as previous, plus….
- Interpretations of “many signs” and “some signs”
- definition of “wetland edge”
- lack of comments

Weedy Ground Cover

- Same as previous, plus….
- WAP list accurate and complete?

Shrub Composition

- Same as previous, plus….
- Estimation of shrub percentages
- Shrubs at upland edge in marshes

Shrub and Small Tree Zonation

- Same as previous, plus….
- Interpretations of “many signs” and “some signs”
- definition of “wetland edge”
- lack of comments

Weedy Shrub Composition

- Same as previous, plus….
- Confusing classifications:
  slash pine
  wax myrtle

Vine Zonation

- Same as previous, plus….
- Difficulties in judging “normal”
- What if there are no vines?

Tree Composition

- Same as previous, plus….
- Lots of judgment involved
- Assessment in marshes?

Tree Zonation

- Same as previous, plus….
- Interpretations of “many signs” and “some signs”
- definition of “wetland edge”
- lack of comments

Tree Health Canopy Stress

- Same as previous, plus….
- seasonal variation
- assessor experience

Tree Health Leaning/Dead

- Same as previous, plus….
- “since last time”
- Difference between dead and stressed not always obvious

Soils

- Same as previous, plus….
- Complex instructions regarding subsidence/oxidation and hydric soil composition
- Inundation

Current Water Level Indicators

- Same as previous, plus….
- Difficult to detect in some cypress domes and many non-forested wetlands
- Interpretation of “current”

Suggested Process

- Meet individually to identify more specifics
- Perform field tests
- “Finalize” data set
- Determine final methodology
- Evaluation and finalization
- Training