

Appendix D Survey Protocol and Form

Surveys are conducted the first week of September, beginning on the Tuesday after Labor Day and concluding by the end of the week. Participants volunteer for one of four survey teams: Team 1 Dollar Point to Eagle Rock, Team 2 Cascade to Upper Truckee East, Team 3 Regan Al Tahoe to Skyland, Team 4 Cave Rock to Crystal Point.

The survey form (next page) includes 16 data fields. Please follow the instructions for each data field. Completed forms are submitted to the Nevada Natural Heritage Program for entry into their TYC database.

- 1) **Survey date, leader, email:** list all surveyors and the team leader name and email
- 2) **Site name:** As written on your survey team assigned list
- 3) **TYC present?** Circle Yes or No
- 4) **Estimate % of entire stem count that is reproductive:** % stems with fruit or flowers
- 5) **Total number of stems:** A stem is a distinct rosette, it can vary in size from 1cm to over 1m. It is a measure of abundance but not genetic individuals since TYC has vigorous clonal growth. Enter the total number for the whole site. This number will be an estimate for large sites.
- 6) **Survey Start and End time:** Enter the time on the clock you begin and end walking on the beach at a site.
- 7) **Total search time:** Enter the total number of minutes of search time multiplied by the number of surveyors.
- 8) **Survey boundary:** This demarcates the area that you walk and actively survey. Enter the start waypoint number and the end way point number. USE UTM WGS84/NAD83.
- 9) **GPS file name:** After the survey you may submit all GPS point for your team in a single file or in multiple files for each site. Please indicate the GPS file name that you use.
- 10) **Photo file name:** After the survey you may submit all photos for your team in a single file or in multiple files for each site. Please indicate the jpg file name that you use.
- 11) **TYC LOCATIONS:** Please record a GPS pt for each TYC cluster and the number of stems present in the cluster. A TYC cluster may be a single stem or many different stems separated by 10m or more. The rationale for this difference is that most handheld GPS units are accurate to within 3 (m) and for the NNHP Biotics database an error within about 6.5 m is acceptable. Therefore, a separation difference of <10m is within the margin of error.
- 12) **Beach Raking:** Is there visible raking on site? Please take a GPS point on the parcel if the raking is isolated (*i.e* only at a single lot within the site called McKinney Creek).
- 13) **List Noxious weeds present:** Species of concern are common mullein (*Verbascum thapsus*), bull thistle (*Cirsium vulgare*), toadflax (*Linaria dalmatica* and *Linaria vulgaris*); also note milfoil (*Myriophyllum* sp.) in the water.
- 14) **Weed Threat level:** Provide a relative rank
- 15) **Rorippa curvisiliqua present?** Presence indicates a potential for misidentification.
- 16) **Describe TYC protections and status and maintenance needs for permanent enclosures**

TAHOE YELLOW CRESS (*Rorippa subumbellata*) FIELD SURVEY FORM

Survey date: _____

Surveyors: _____

Leader: _____ Email: _____

SITE NAME: _____

TYC Present? **Yes** **No** **Total Number of Stems:** _____

Estimate the proportion (%) of the total number of stems across the entire site that are reproductive: _____

Survey Start Time: _____ **Stop Time:** _____

Total search time: _____ x Number of surveyors _____ = _____ person minutes

SURVEY BOUNDARY: USE UTM WGS84/NAD83 ONLY-Verify the datum on your GPS

GPS file name: _____ **Photo file name or jpg**

#s: _____

START POINT waypoint number _____ **END POINT** waypoint number: _____

TYC LOCATIONS: Please provide explanatory comments for GPS points, on the back of the sheet as necessary.

Waypt _____ # stems: _____

Waypt _____ # stems: _____

Waypt _____ # stems: _____

Waypt _____ # stems: _____

Waypt _____ # stems: _____

Waypt _____ # stems: _____

Waypt _____ # stems: _____

Waypt _____ # stems: _____

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Waypt _____ # stems: _____

Waypt _____ # stems: _____

Waypt _____ # stems: _____

Waypt _____ # stems: _____

Waypt _____ # stems: _____

Waypt _____ # stems: _____

LAND USES AND IMPACTS (reference conditions across entire site)

Beach raking: Yes No Waypoints/ notes for raked parcel(s): _____

List noxious weeds present: _____

Weed threat level: Low Medium High

Rorippa curvisiliqua present: Yes No

Describe any protections for TYC (fencing, natural barriers, signs). For permanent public enclosures, describe status and maintenance needs: _____

Additional notes, please include waypoint number if applicable: _____

Tahoe Yellow Cress Survey Sites

